waste until their petition for a permit is approved by the A.Q.M.D." Ex. 10380.

Mr. Paine responded to Mr. Apel's August 21, 1985 correspondence by letter dated October 1, 1985, which advised again that closure of the McLaughlin Pit needed to comply with Article 8 of Subchapter 15 and demanded that the closure plan specified in those regulations be submitted by October 31, 1985. The letter continued: "Please be aware that a registered civil engineer or registered geologist must make the evaluation specified in Section 2582(b)(1), and certify their findings as to whether contamination exists." Ex. 10379.

On March 3, 1986, Mr. Apel wrote to the EPA regarding the "Facility Biennial Hazardous Waste Report for 1983". His letter stated: "our company has been trying to dispose of our waste since September 1984. We have disposed of all the waste water and sludge off site but have not found a facility that will accept the solid material that remains . . . [o]nce the existing waste has been disposed, we will close the surface impound in accordance with all state and local regulations." Ex. 10378. The Report, which was signed by Mr. Apel, indicated that some 2,000 pounds of "K044" "waste from the manufacture of explosives" was stored onsite at the Pyrotronics facility in an "S04" method of storage – which signified a "surface impoundment."

On July 10, 1986, Mark Adelson of the Regional Board performed a routine inspection of the McLaughlin Pit. His report noted that Apollo had failed to submit its Subchapter 15 groundwater monitoring report, which was due on May 28, 1985 (the leak detection report which would have required sampling of the groundwater and lead to perchlorate detection had it been properly carried out), or its closure plan for the McLaughlin Pit, which was due on October 31, 1985. Ex. 10377; Berchtold Dep., 224:6-226:25; Ex. 10385, 103879; Adelson Dep. at 71:10-72:6. The report also observed that two feet of "dried material impoundment" remained in the McLaughlin Pit, and that Apollo had been trying to dispose of the waste "for the past year, but with no success", because nobody would permit transportation, disposal or on-site destruction of the waste. According to Mr. Adelson, Apollo had still failed to collect or submit its groundwater

monitoring report more than a year after it was due; had still failed to submit a closure plan almost a year after it was due; and had no plan to dispose of the dried, explosive, Class I hazardous waste with a propensity to auto-ignite that remained in its McLaughlin Pit. Ex. 10377; Adelson Dep., 71:10-72:6. Nonetheless, Mr. Adelson concluded his report with the notation: ***"No Action Necessary."*** Adelson Dep., 72:8-22. Robert Holub of the Regional Board signed off on the report by initialing it on July 13, 1986. Holub Dep., 663:4-666:18; Berchtold Dep., 232:5-25.

Pyrotronics filed for Chapter 11 bankruptcy on June 6, 1986. Ex. 10967. The Regional Board was aware of this bankruptcy at least as early as July 11, 1986, according to a file memorandum prepared by Mr. Adelson memorializing a conversation in which Mr. Apel told him that Pyrotronics was in bankruptcy. Ex. 10376; Berchtold Dep., 233:17-234:22; 234:24-235:2. And Mr. Adelson testified that he likely would have informed his superior – Mr. Holub at that time – if and when a discharger told him that it was in bankruptcy, but that the Regional Board didn't have a particular policy or practice to deal with waste facilities that were in bankruptcy. Adelson Dep., 85:20-86:11; 87:12-20; 87:22-88:10. According to Mr. Adelson's memorandum, at that time Mr. Apel said that funds for the closure of the McLaughlin Pit could only be allocated with court approval. There is no evidence that anybody from the Regional Board or the State made any claim in bankruptcy against Pyrotronics with regard to closure of the facility. Adelson Dep., 89:11-18; *see also* Berchtold Dep., 235:4-237:3; 250:14-19[44].

On August 29, 1986, Mr. Mergil sent a letter to Mr. Paine requesting permission to stop submitting "septic tanks monitoring system, report and chemical analysis" because Apollo had shut down its operations. Ex. 10372. Mr. Holub purported to grant this

[44] Virtually all of the Regional Board staff who inspected the McLaughlin Pit and who were deposed, confessed that there was no Regional Board policy for how to deal with bankrupt dischargers, particularly bankrupt dischargers with Class I surface impoundments and who were facing the expense of a proper closure under Subchapter 15. This oversight unquestionably has put the State at risk for not protecting itself financially by taking the simple step of filing a claim in the bankruptcy of Pyrotronics for the cost of a proper closure of the McLaughlin Pit. *See, e.g.,* Berchtold Dep., 234:19-237:3, 250:8-250:19.

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request in a letter to Mr. Apel sent on October 8, 1986, which stated that Apollo no longer needed to comply with the Monitoring and Reporting Program contained in Order 78-96 as it pertained to the septic tanks, and that Order 78-96 would be rescinded after the McLaughlin Pit was closed in conformance with Subchapter 15. Ex. 10371. It is highly unlikely, however, that Mr. Holub had the authority to unilaterally exempt an entity from complying with its WDRs. Berchtold Dep., 271:11-14.

Mr. Holub's October 8, 1986 letter also advised that two proposed closure plans that had been submitted by Apollo for closure of the McLaughlin Pit[45] were inadequate because "*neither proposal includes site sampling to determine whether the impoundment has leaked pollutants into the ground.*" The letter stated that soil sampling and analysis were required before closure of the McLaughlin Pit could be approved, because such sampling and analysis would provide "information necessary to determine the need for clean-up or mitigation measures and/or a more extensive monitoring effort." Ex. 10371. The letter also reminded Apollo, again, that closure of the McLaughlin Pit needed to comply with Subchapter 15 and be supervised and certified by a registered engineer or geologist, and demanded submission of a closure plan by October 23, 1986 – the same closure plan that Apollo was supposed to have submitted a year earlier, on October 31, 1985.

On October 20, 1986, Mr. Apel replied to Mr. Holub's October 8, 1986 letter, and wrote that he was uncertain about his ability to obtain funds for the McLaughlin Pit's closure because the facility was in bankruptcy. The letter also stated that he would not be able to provide a closure plan by October 23, 1986 as Mr. Holub had requested. Ex. 10103. The letter mentioned that Apollo's use of septic tanks continued on a limited basis, even though manufacturing at the facility had ceased. According to testimony from Regional Board officials, the Regional Board still did nothing to protect the Regional

[45] On July 15, 1986, Mr. Apel forwarded Mr. Adelson two proposals he had received for closure of the pond. Ex. 10373-75. One of those proposals was from a William McLaughlin of McLaughlin Enterprises, Inc., an individual who purported to have some experience in environmental matters.

Board's or the State's interests in the bankruptcy proceeding of Pyrotronics. Adelson Dep., 89:11-18; Paine Dep., 143:22-144:7; *see also* Berchtold Dep., 235:4-237:3; 250:14-19.

h. Subchapter 15 Provided Very Specific and Detailed Closure Requirements for Surface Impoundments

In addition to the requirements for existing waste management units, the Subchapter 15 regulations also included a rigorous set of closure and post-closure requirements. Ex. 20085, at Sections 2580-2584. They specifically mandated that closure be under the supervision of a "registered civil engineer or a certified engineering geologist," as the Regional Board letters to Pyrotronics had indicated in 1985 and 1986. Ex. 20085, at Section 2580(b). The specific surface impoundment closure requirements were set forth in Section 2582, which the Regional Board had pointed out to Pyrotronics on multiple occasions through correspondence would be the applicable provisions to govern the closure of the surface impoundment. Those requirements mandated complete removal of all liquids in the surface impoundment, *plus* any remaining "residual wastes, including sludges, precipitates, settled solid and liner materials contaminated by wastes." Ex. 20085, at Section 2582(b)(1). If that was not done, then the surface impoundment had to be closed as a landfill under Section 2582(b)(2). And, of course, any contaminated soil surrounding the surface impoundment needed to be removed as well. *Id.* All dischargers, including Pyrotronics, needed to submit a closure and post closure plan to the Regional Board, although if all of the waste constituents were removed from a surface impoundment, along with any contaminated liner, the Regional Board could waive the "post-closure" requirements pursuant to Section 2582(b)(1). This waiver never occurred.

Adherence to Subchapter 15's closure requirements for surface impoundments should have been critical for the Regional Board, since its staff was well aware of the potential for surface impoundments to impact groundwater quality if they were not managed properly. Adelson Dep., 47:16-49:10 (Testifying that the Regional Board kept

files for surface impoundments "indefinitely" "because those types of facilities have a potential to cause water quality concerns . . . long after they've been closed . . . the nature of the waste that's impounded in these types of facilities, if the facilities were to fail . . . that waste would infiltrate, percolate into the ground . . ."; this was a "widely accepted fact.").

In fact, a proper closure under Subchapter 15 would have included sampling to confirm that there was no remaining contamination under the liner of the McLaughlin Pit, and if contamination was detected, establish a corrective action program to investigate and remediate that contamination including groundwater. Ex. 20072 at Section 2558. The simple fact is that the proper closure under Subchapter 15 would have readily revealed what the current site investigations have already found – that the McLaughlin Pit leaked, and leaked substantially, and that it caused groundwater contamination with perchlorate, as well as with other compounds. Kresic Dec., ¶¶ 28, 35, 55, 56; Kavanaugh Dec., ¶¶ 60-62, 100-101. That, in turn, would have triggered the corrective action program of the Subchapter 15 regulations which would have mandated that Pyrotronics or Ken Thompson (see below) investigate the extent of the contamination caused by the McLaughlin Pit's operations and then take the necessary corrective actions to clean it up. The regulations even mandated a showing of proper financial assurance[46] by the discharger to complete its closure and post-closure obligations. In short, by 1984 the Regional Board had all of the tools it needed, coupled with a mandatory duty to use them, to protect the waters of the state, to investigate the McLaughlin Pit and to compel the parties responsible to clean up their contaminated legacy. As we shall see next, the Regional Board failed in that duty.

i. Mr. Thompson Purchases the Southern Portion of the 160-Acre Parcel and Retains Mr. McLaughlin to Close the McLaughlin Pit

In January 1987, Mr. Ken Thompson, a businessman who planned to build and

[46] Financial assurance would have been one thing to bring to the bankruptcy court's attention had the Regional Board taken any step to protect the State's interests.

operate a concrete pipe manufacturing business in Rialto, negotiated the terms of a purchase and sale agreement to acquire some 20 acres of the Rialto property from Pyrotronics, including the parcels of land (Parcels 10 and 11) where the McLaughlin Pit was located. Ex. 11116 (Escrow Instructions and purchase and sale agreement dated January 1987). Mr. Thompson had visited the property and seen the McLaughlin Pit before he purchased the land, and identified a photograph of the pit as a feature he saw during his site visit. Thompson Dep., 31:3-32:25; Ex. 20002 (photograph of the McLaughlin Pit taken by McLaughlin).

The terms and conditions of Ken Thompson's proposed acquisition of the property from Pyrotronics included a provision that for $29,800 taken out of the amount of money placed into escrow for the purchase of the property, Mr. Thompson would assume all responsibility for the proper closure of the McLaughlin Pit, and would release Pyrotronics from any liability for same. Ex. 11116 at ¶ 7. Under the terms of the proposed purchase, Mr. Thompson also assumed all of the obligations imposed by law to prepare the property for his improvements. Finally, Mr. Thompson's proposed purchase agreement provided a contingency to closing that Mr. Thompson needed to satisfy himself that he could redevelop the property consistent with his plans. The total purchase price for the 20+ acres was around $500,000. Ex. 11116.

Because Pyrotronics was in bankruptcy at the time, the sale of the property to Mr. Thompson needed to be approved by the bankruptcy court before it could move forward. Therefore, bankruptcy lawyers for Pyrotronics prepared a motion for the bankruptcy judge to approve the sale. Ex. 11215. In the papers filed with the Court, the President of Pyrotronics, Ray Arthun, declared under penalty of perjury that Ken Thompson would take responsibility for the closure of the pond in a manner consistent with all applicable laws and that Mr. Thompson would assume all responsibility for the costs associated with the legal requirements necessary for the redevelopment of his property. *Id.*, 12. Mr. Arthun also made clear that Mr. Thompson would release Pyrotronics from any liability for those expenses. *Id.* The one key condition to the sale for Mr. Thompson was that he

needed to satisfy himself that the property could be redeveloped for his purposes, before he had to close on the sale. *Id.*

In early January 1987, Mr. McLaughlin and Terry O'Brien, an employee of Ken Thompson, met with Steve Van Stockum, of the County of San Bernardino Department of Environmental Health, to discuss the County's requirements for closure of the pit. Ex. 10640. At the meeting, Mr. McLaughlin presented his ideas regarding closure of the pit, and Mr. Van Stockum advised him that, in addition to approval by the County, such plans would need to be cleared with the Regional Board, the South Coast Air Quality Management District, and the California State Department of Health Services, as well as the City of Rialto Fire Department and the USEPA. *Id.*

On January 26, 1987, Mr. McLaughlin sent a letter to Mr. O'Brien regarding a proposal for the closure of the pond. Ex. 10748. In that letter, Mr. McLaughlin indicated that he believed that the closure of the pond would require the approvals of the County of San Bernardino, the California State Department of Health Services, the South Coast Air Quality Management District, the City of Rialto Fire Department and the United States Environmental Protection Agency. He said that encapsulation of the remaining waste materials was one possible solution and/or burning the waste was another. Mr. McLaughlin advised that it would cost approximately $29,800 to close the pond, and that was the figure used by Mr. Thompson in his escrow and purchase and sale agreement proposal with Pyrotronics.

The letter also noted:

> *It is possible that over the years, there has been significant leeching of material into the ground from the pit.* This could lead to restrictions on that portion of the ground in the vicinity of the pit such as placing a concrete pad over the area. Whether or not such a restriction will be likely issued will have to await the results of the borings.

Accordingly, the letter proposed taking "only six borings with measurements at five and ten feet." As acknowledged by Mr. Berchtold in recent deposition testimony, such samples would need to be taken "generally underneath" the McLaughlin Pit to determine

whether or not it had leaked. Berchtold Dep., 257:2-7.

j. Mr. Thompson Files a Proposed Site Plan And Environmental Information Form With the City Indicating that the McLaughlin Pit Must Be Closed Prior to Redevelopment of the Property

On February 25, 1987, Mr. Thompson's agent, Terry O'Brien, filed a proposed Plot Plan for the redevelopment of Parcels 10 and 11, which included the land where the McLaughlin Pit was located. He concurrently filed an environmental information form which was designed to identify the other permits and approvals from environmental agencies that the applicant believed would be required in order to prepare the property for redevelopment. Ex. 11158. According to then Director of the Rialto Planning Department Rod Taylor, that form was then used by the City of Rialto to review the anticipated impacts that the project would have on the environment under the California Environmental Quality Act ("CEQA"), so the City could decide whether it needed a full Environmental Impact Report or some other form of environmental review. Taylor Dep., 21:17-22:14, 74:7-75:2, 76:1-25; Story Dep., 38:1-40:18, 39:6-10.

On March 12, 1987, Lynn "Mac" McQuern, an environmental planner with the City of Rialto, prepared an initial study under CEQA by filling out a form that was developed by the City of Rialto and consistent with CEQA guidelines. Ex. 11161. On that form, Mr. McQuern correctly concluded that closure of the fireworks residual pit would require approvals from the County of San Bernardino, the California Department of Health Services, the United States Environmental Protection Agency, the Santa Ana Regional Board, and the Rialto Fire Department. Mr. McQuern recommended to the City's Environmental Assessment Committee ("EAC")[47] that the City adopt a "Negative Declaration" under CEQA, but with certain mitigation measures, one of which, notably, would require the project applicant (Ken Thompson) to take all necessary steps to close

[47] Mr. Rod Taylor, the Planning Director of the City of Rialto in 1987 and Mr. Michael Story, the current Planning Director and a former associate planner with the City of Rialto in 1987, both testified that the Rialto Fire Department had a position on the EAC.

the pond and obtain all necessary approvals and permits, including approvals from the various public agencies identified by Mr. McQuern, *prior to any grading* of the property for Mr. Thompson's site redevelopment. Shortly thereafter, the City of Rialto's Environmental Assessment Committee reviewed Mr. McQuern's recommendation, made some slight changes, and then adopted the recommendation as a formal Negative Declaration with mitigation measures under CEQA. Ex. 11162. The following mitigation measure (No. 2) was included as part of the Negative Declaration:

> Prior to any grading, construction or installation of equipment on Parcel 11, the applicant shall have completed a satisfactory cleanup program of the fireworks residual pit on Parcel 11 and shall have certified the satisfactory completion of that program in a report to the City Engineer. As part of that cleanup program, the applicant shall obtain all necessary permits or approvals from local, state and/or federal agencies as required.

The proposed Negative Declaration with mitigation measures was duly published in the local newspaper (Story Dep., 103:11-21) and, after the close of the comment period, the Negative Declaration with mitigation measures was ready to be finalized by the City.

On May 28, 1987 Mr. Thompson's agent, Terry O'Brien, filed the final application for the approval of the Precise Plan of Design ("PPD") with the City of Rialto. Shortly thereafter, Mr. Thompson acquired the property by grant deed from Pyrotronics Corporation. Exs. 11165, 11116. There is no doubt that the fireworks residual pit, or McLaughlin Pit, had not been closed as of the date Mr. Thompson acquired the property; and, therefore, the steps to close the pit, and the corresponding approvals and permits, still needed to be completed by Mr. Thompson. But obviously Mr. Thompson had sufficiently satisfied himself that his development could be done to his satisfaction at that point, and he had been notified of the condition on the Negative Declaration. Story Dep., 51:6-17.

On either June 4 or 5, 1987 the City of Rialto's Development Review Committee ("DRC") considered Mr. Thompson's PPD and granted him the right to proceed with his development proposal subject to certain conditions. Ex. 11168 (June 8, 1987 letter

which attaches the conditions of approval). On that same day, the City also finalized the approval of the Negative Declaration with mitigation measures and issued the formal Notice of Determination a few days later. Story Dep., 105:22-110:14. The Negative Declaration contained the aforementioned mitigation measure requiring Mr. Thompson to cleanup the McLaughlin Pit and obtain all necessary government approvals prior to any grading.

A careful review of the City's files produced to Goodrich did not reveal any submission by Mr. McLaughlin or anyone else on behalf of Mr. Thompson indicating that the mandatory certification report regarding closure of the McLaughlin Pit along with sign offs from the County, State, Regional Board, and the SCAQMD was ever filed with the City of Rialto on behalf of Mr. Thompson. A subpoena seeking such information did not result in the production of any such documents. The City's current Planning Director, Mike Story, testified that he would assume such a report had been made, but no such report has ever been produced to Goodrich Corporation and Mr. Story did not recall seeing one in the files. Story Dep., 122:10-132:4. Nor has the City of Rialto ever produced any other written (or oral) confirmation that it approved a submission from Mr. McLaughlin regarding the CEQA mitigation measure adopted by the City in the Negative Declaration.

Although there is no record that Mr. Thompson ever submitted the mandatory certification regarding closure of the McLaughlin Pit before the approval of his grading plan, he was apparently able to begin grading the site by early July 1987. A significant event occurred on July 15, 1987, when CHJ, Incorporated, (Ken Thompson's soils engineers for the project) reported that the grading contractor working on the "subexcavation of the building pad," had unearthed buried drums:

> The barrels contained an unknown substance which, along with the deteriorating barrels, had stained the soil. A distinct smell was also present from the excavated area. Because of these conditions, the Rialto Fire Department was notified. Upon their arrival, the Rialto Fire Department contacted the San Bernardino County Environmental Health Department, and a representative from their office visited the site. At this time, no determination has been made

> as to the content of the unknown substance or the extent of the area covered. When a determination at to the safety of the material has been made, C. H. J., Incorporated will return to the site for testing.

Ex. 11121. Apparently no follow-up action was ever taken.

Notably, the City of Rialto has not produced any documents that explain what their Fire Department found in those drums; nor has any witness from the City or the County shed any light on what was in the buried drums found on the property that Ken Thompson purchased from Pyrotronics in 1987. But the fact remains that at some point between June 8 and July 15, 1987, the City of Rialto approved Ken Thompson's plans for grading the former Pyrotronics' site without requiring Mr. Thompson to complete the mitigation measure included in his negative declaration – *i.e.*, that a full and complete closure of the McLaughlin Pit was to be completed and all required public agency approvals were to be obtained, and a certification of completion of same sent in a report to the City Engineer. No such report has been produced by the City and so it must be presumed that such a report simply does not exist and the City let Mr. Thompson grade his site without enforcing the mandatory environmental mitigation measure in the Negative Declaration.

On July 24, 1987, Mr. McLaughlin on behalf of Mr. Ken Thompson sent a letter to Mr. Holub[48] advising that he had been retained to close the pond, and proposing "to drill *four* boreholes to a depth of 20 feet taking samples at 5, 10, 15 and 20 feet" to "insure that previous leakage from the pit has not contaminated the groundwater." Ex. 10108. So the original proposal for six borings that Mr. McLaughlin had presented to Ken Thompson had now been reduced to four. According to Mr. McLaughlin, prior to sending this letter he confirmed with representatives of the Regional Board that four boreholes

[48] Copied on the letter were J. Hinton of the Department of Health Services, S. Van Stockum of the County, and R. Thrash from the SCAQMD. Ex. 10108. Mr. McLaughlin stated in the letter that "we are approaching the U.S. Environmental Protection Agency, the South Coast Air Quality Management District, the San Bernardino County Department of Environmental Health Services, and the California Department of Health Services on other aspects of the problem."

would be sufficient. McLaughlin Dep., 234:8-14. It was decided that the samples would be analyzed for heavy metals only, based on the assumption that if such metals didn't leak the pond was impervious. No effort was made to determine which metals were used in fireworks or to sample for oxidizers such as the well-known fireworks oxidizer, perchlorate. McLaughlin Dep., 235:2–237:8. There is also another glaring omission. Solvents were not considered by the Regional Board to be a substance of concern. This is surprising considering that this surface impoundment received waste materials for well over a decade from multiple users beginning in the early 1970's.

On July 27, 1987, Mr. McLaughlin wrote to Phil Bobel of the United States Environmental Protection Agency, seeking approval to burn the material in the pond upon receipt of the appropriate burn permit from the SCAQMD and with supervision from the local fire department (City of Rialto); to treat the remainder by "chemical fixation and solidification to convert the ash into an artificial clay from which ions cannot leach into the water table"; and to then crush and bury the pond on-site. Ex. 10109. The letter indicated that after the material was burned, "post-fire soil borings and analysis" would be conducted "under the direction of the Santa Ana Regional Water Quality Board to insure that the ground water has not been contaminated."[49] The letter closed by requesting USEPA's concurrence "subject to the approvals of the South Coast Air Quality Management District's Hearing Board and California Department of Health Services." In the letter, Mr. McLaughlin makes clear that the material in the pond is a listed "hazardous waste" under USEPA regulations and refers to it as a "K044" listed waste (defined as "wastewater treatment sludges from the manufacturing and processing of explosives"), which is consistent with Mr. Apel's description of the waste that was sent to the Regional Board in 1986. Ex. 10109. There is no record of a response by USEPA.[50] Note that this surface impoundment remains subject to federal

[49] Post-fire borings were never taken. McLaughlin Dep., 256:2-12.

[50] Attached as Ex. 11232 is a declaration and a subpoena served on USEPA for records that evidence any approval by USEPA confirming there are no documents from EPA in response.

regulations including the Resource Conservation and Recovery Act (RCRA) and the Correction Actions required under the Hazardous and Solid Waste Amendments (HSWA). Comprehensive guidance documents for accession and closing such facilities were issued, in 1986, by USEPA's Waste Management Division, Office of Solid Waste in 1986. As revealed by the case facts, these procedures were completely ignored. The McLaughlin Pit is a surface impoundment with recognized release mechanisms of "overtopping" and "seepage" as referenced from USEPA guidance manuals.

An undated inspection report prepared by Dan Brown, staff engineer, of the Regional Board (the inspection appears to have been on August 6, 1987) stated: "Western Precast Products assumed the investigation and cleanup of the [sic] when they bought property from Apollo. McLaughlin Enterprises has been retained to Western Precast Products to do the investigation and clean-up." Ex. 10370.

On August 11, 1987, Gary Litton, Senior Staff Engineer, of the Regional Board wrote to Mr. McLaughlin to confirm the Regional Board's "approval of the course of action to be taken to determine if leakage from the Apollo waste pit has contaminated the ground water." Exs. 10114, 10117. The letter indicated that pursuant to conversations between Mr. McLaughlin and Messrs. Holub, Brown, and Litton, agreement had been reached that now only *two* boreholes would be drilled "to determine if leakage from the Apollo waste pit has contaminated the groundwater". This was two boreholes fewer than proposed by Mr. McLaughlin's July 27, 1987 letter, and four fewer than proposed by his January 26, 1987 letter. Exs. 10114, 10117. The letter also stated that the boreholes "would be drilled 20 feet deep at an angle towards the pit in order to collect soil samples directly underneath the pit." *Id.*; *see also* McLaughlin Dep., 259:6-22.

A letter from Mr. McLaughlin to Pioneer Consultants on August 17, 1987 confirmed that Pioneer, a soil sampling drilling contractor, would drill two soil sampling holes at an angle of 15 degrees from vertical, and at depths of five, ten, fifteen and twenty feet under the surface. Ex. 10118. Mr. Brown, of the Regional Board, was

copied on the letter, and Mr. McLaughlin testified that he "absolutely" kept Mr. Brown informed as the project progressed. *Id.*, McLaughlin Dep., 262:23–263:4. Mr. Holub and Mr. Litton also initialed the letter, indicating that they had reviewed it. Berchtold Dep., 272:18-273:3.

The drilling was conducted on August 26, 1987, with Mr. Brown present[51] on behalf of the Regional Board. Mr. Brown prepared a memorandum, dated September 1, 1987, summarizing the results of that work. Ex. 10122. According to the memorandum, the anchor lock on the drill broke while they were drilling the first boring so they were only able to complete o*ne* boring, to 11.1 feet, and had to "leav[e] the job incomplete"; they were unable to drill even the two boreholes to a depth of twenty feet (with multiple sampling locations) as specified in the most recent plan. *Id.*; *see* Berchtold Dep., 277:24-278:5; McLaughlin Dep., 259:3-5. Therefore, according to Brown's memorandum, only two samples were taken, from the single bore hole, based on a drill angle of 19 degrees from vertical; one at a depth of 5 to 5.8 feet below ground surface ("bgs"), and the second at a depth of 10.6 to 11.1 feet bgs. Mr. Brown's memorandum states clearly that only the deeper sample could possibly have been below the footprint of the pond, and that this was at best only "2 to 4 inches" inside the vertical projection of the pond, and 5 to 5.5 feet below the pond. Berchtold Dep., 278:7-280:3, 280:8-14. Of course, Mr. Brown's evaluation of the distance inside the footprint of the pond for the solitary sample could be in error if the pond wall thickness was more than four inches or if the exact angle on the drill was something less than 19 degrees. Standard pool construction at the time would have included a 7 to 12 inch thick wall. In that case, the one soil sample taken might not have been under the McLaughlin Pit at all. Holub Dep., 728:9-729:20.

Neither Mr. Brown nor anyone else from the Regional Board required Mr. McLaughlin to take any additional samples from below the pond pursuant to the original

[51] At Exhibit 11226 is a photograph produced from the San Bernardino County files that appears to show the drilling of the single boring.

plan. McLaughlin Dep., 269:6–270:3; 278:16-20. After reviewing contemporaneous documentation of the samples taken by Mr. McLaughlin from a single boring, the best description Mr. Berchtold could give to the work was that "it was *limited*". Berchtold Dep., 285:17-287:15. A number of Regional Board witnesses have confirmed that they had not heard of using a single soil sample to determine if a surface impoundment of the dimensions of the McLaughlin Pit had leaked. Adelson Dep., 102:18-103:4; 101:16-25; Stewart Dep., 129:6-11. Mr. Adelson testified that "at an ***absolute minimum***, four soil samples would be necessary" to determine if a plastered swimming pool the size of the McLaughlin Pit had leaked. Adelson Dep., 103:6-104:7; *see also* Adelson Dep., 108:24-109:12 (". . . I would have encouraged the use of more than one sample."). In any event, the assessment work required by the Regional Board was inadequate and contradictory to existing Federal guidance at that time. And Gary Litton, Dan Brown's supervisor at the time had no explanation for why they had agreed that one sample was sufficient. Litton Dep., 142:11-14, 144:19-145:16.

Moreover, Subchapter 15's requirement that each discharger implement a monitoring plan to assess for the presence of waste constituents in and around a surface impoundment was never enforced by the Regional Board, on Pyrotronics, with respect to the McLaughlin Pit. The monitoring program that the Regional Board should have required, and was under a duty to require, would have specifically included monitoring for potassium perchlorate among other chemicals if a leak had been detected. When asked about this glaring omission, Gerry Thibeault, the Executive Officer of the Regional Board, testified as follows:

> Q. [W]ith regard to potential for perchlorate spilling out of this pit either by overflow or by – or through leaking, are the two samples in the locations taken sufficient to characterize whether or not it leaked or spilled perchlorate?
>
> A. Well, perchlorate wouldn't have been sampled for back then.
>
> * * *

Q. You testified a moment ago that in your judgment, in 1987 when this [the pit was closed], that there was no need to test for perchlorate in the soil or groundwater . . . why not?

A. Because it was not know to be an issue.

Q. All right. And not known to be a water quality issue?

A. Not known to be a water quality issue.

Thibeault Dep., 170:5-15, 172:2-17. The Executive Officer's assertions are plainly contradicted by the Subchapter 15 regulations, which were adopted three years before closure of the McLaughlin Pit, and, as noted, expressly required monitoring of the constituents in the McLaughlin Pit, including perchlorate in the event a leak had been detected.[52]

A September 8, 1987 letter from Mr. McLaughlin to Mr. Brown[53] confirmed that only one boring was completed, but asserted that the single sample taken beneath the pond was sufficient to conclude that there had been no soil contamination from any waste that potentially leaked or spilled from the pond during its sixteen year existence. Ex. 11151. The letter also enclosed test data from the soil samples "taken jointly by D. Brown of the S.A.R.W.Q.C.B. and W.J. McLaughlin . . ." Notably, Mr. McLaughlin did not sample for aluminum, barium, strontium, potassium or nitrates, among other chemicals that are well known ingredients of all fireworks. *Id.*; *see* Berchtold Dep., 282:12-23. Further, and inexplicably, McLaughlin's sampling did not include such obvious constituents of fireworks wastes as nitrates, a major concern even then of the Regional Board and a well-known ingredient of fireworks in the form of potassium nitrate. Of course, the proposal by McLaughlin did not mention perchlorate, despite its obvious

[52] Mr. Thibeault later testified that, "[i]n hindsight I think yeah if we had known about perchlorate we would have we should have checked for it." Thibeault Dep., 484:12-14. But this "hindsight" admission simply ignores the fact that in 1987 Mr. Thibeault and his staff knew, or should have known, that Apollo was using thousands of pounds of perchlorate every month and discharging 3,000 gallons per day of perchlorate-laden industrial waste into the McLaughlin Pit. Ex. 10023.

[53] Copied on the letter were J. Hinton (DHS), M. Monsees (EPA), R. Thrash (SCAQMD), and S. Van Stockum (S.B. Co.).

presence in the waste stream and its listing on Appendix III in the Subchapter 15 Regulations. The letter requested the Regional Board's concurrence that there had been no soil contamination from the McLaughlin Pit.

Also on September 8, 1987, Mr. McLaughlin, on behalf of Ken Thompson sent a letter to Mathew Monsees of USEPA, following up on his July 27, 1987 letter and formally requesting permission to burn the materials that remained in the pond in potential violation of numerous State and Federal regulations. Ex. 10848. The letter reiterated Mr. McLaughlin's conclusion that no soil contamination had occurred based on the previously discussed samples he had "mutually taken" with Mr. Brown of the Regional Board. Mr. Brown, among others,[54] was copied on the letter; however, there is no indication that Mr. Brown or anyone else from the Regional Board advised the EPA that the letter's conclusion was suspect given that Mr. McLaughlin's sampling, at best, obtained only one sample 2 to 4 inches below the pond. *See* Berchtold Dep., 284:1-7.

According to Mr. McLaughlin's letter, "the pit and its contents are under the review of several agencies: The California Department of Health Services, the San Bernardino County Department of Environmental Health, the Santa Ana Regional Water Quality Control Board, the South Coast Air Quality Management Control District, and the Rialto Fire Department, as well as the U.S. Environmental Protection Agency. All have their legitimate interests and all insist that their approval of a specific course of action be conditioned upon the mutual approval of all other involved agencies. This is accepted by both the owner, Western Precast Products, Inc., and ourselves." Ex. 10848.

On September 21, 1987, Mr. McLaughlin, again on behalf of Ken Thompson, and Mr. O'Brien (of Western Precast) sent a letter to John Hinton, of DHS,[55] seeking approval to "encapsulate" the material remaining in the pond. Ex. 10126. The letter indicated that Mr. McLaughlin and Mr. Brown took samples next to and under the pond in August 1987, and that the Regional Board "concurred" with McLaughlin's conclusion

[54] Messrs. Hinton, Thrash and Van Stockum were also copied on the letter.

[55] Copied on the letter were Messrs. Brown, Monsees, Thrash, and Van Stockum.

that neither the soil nor groundwater had been contaminated. Mr. McLaughlin further wrote that analysis indicated that the residual in the pit would not sustain combustion, so he was recommending encapsulation "since there has been no leakage of the material from the pit into the ground in at least 11 (and possibly 37) years . . ."

On September 22, 1987, Mr. Litton, of the Regional Board, wrote in a draft letter to Mr. McLaughlin advising that "we concur that no soil contamination from the pit has taken place." Ex. 10127. "We believe that the lack of contamination was due to the impermeable type of construction of the pit. Therefore, no future soil tests are necessary."[56] Ex. 10127. The Regional Board's position is contrary to previous observations of overtopping of the surface impoundment but consistent with their lackadaisical monitoring requirements as applied to this site. The letter also explained that Mr. McLaughlin's proposal to encapsulate the waste – which was contemplated because tests indicated the material in the pond would not burn – was "unacceptable" to the Regional Board because the material in the pit was considered hazardous and therefore "would have to be removed and disposed of in a Class I landfill."[57] *Id.* and McLaughlin Dep., 290:14-19. Encapsulation, as contemplated by Mr. McLaughlin, would have required the approval of the Regional Board and permits from other agencies. Berchtold Dep., 290:5-16.

On November 10, 1987, Mr. McLaughlin wrote to Ronald Ripley of the Hazardous Waste and Toxics Control Division of the County Department of Environmental Health Services, seeking permission to encapsulate the waste remaining in the pond. The letter stated that application for such permission had previously been made to John Hinton of

[56] Based on this letter, Mr. McLaughlin testified that he understood that the Regional Board was satisfied that the sampling taken from the single boring was sufficient to determine that the pond had not leaked and that there was no contamination. McLaughlin Dep., 286:8–287:13; *see also* McLaughlin Dep., 290:2-13.

[57] A file memorandum prepared by Dan Brown and dated September 23, 1987 indicates that he and Gary Litton met with Mr. McLaughlin on September 22, 1987, and told Mr. McLaughlin that encapsulation was unacceptable to the Regional Board. Ex. 10128. Because they did not wish to set a precedent, Mr. Brown and Mr. Litton advised Mr. McLaughlin that they would need to discuss the issue with Jim Bennett, the Executive Officer, and Gerry Thibeault, then a senior engineer, with the Regional Board. *Id.*

the Department of Health Services but that, without a decision, the responsibility for the site was passed to Mr. Ripley's office. Calculations included with the letter reflect that there were *54,000 pounds* (over 25 tons) of constituents remaining in the McLaughlin Pit at that time. There is no evidence that Mr. Ripley responded to this letter.

On November 23, 1987, Mr. McLaughlin on behalf of Ken Thompson wrote to Mr. Van Stockum at San Bernardino County, requesting approval to encapsulate the remaining material in the pond. Ex. 10140. The letter indicated that the possibility of treating the waste by encapsulation had been discussed with USEPA, California Department of Health Services and the SCAQMD, and that none of these agencies had objected. So as of November 23, 1987, Mr. McLaughlin still planned to treat the waste by encapsulation; not by burning. McLaughlin Dep., 307:6-9. One copy of the letter includes a "received" stamp from the Rialto Fire Department, dated November 24, 1987, and handwriting (most likely from a City of Rialto Fire Department official) indicating: "Waste Products in Pit were Burned 12-4-87. A Second Burn is Scheduled later in Month – after which the Pit will be removed. Previous requests to State Environmental Health were denied. So burning the waste was decided upon." Ex. 11157.

On December 3, 1987, Mr. Van Stockum of San Bernardino County wrote to Angelo Bellomo of the State of California, Department of Toxic Substances Control ("DTSC"), and requested that DTSC "respond in writing to McLaughlin Enterprises proposal to encapsulate the waste in this pit and leave it on-site."[58] Ex. 10141. According to the letter, the County had advised Mr. McLaughlin that he needed to contact DTSC and apply for a TSDF (treatment, storage or disposal facility) or variance to encapsulate the pond as he proposed - but DTSC had not responded to Mr. McLaughlin. From this response, the County recognizes the applicability of Subchapter 15 and USEPA's RCRA regulations. As such, the letter requested "a written

[58] This letter was in response to October 27, 1987 correspondence from Mel Knight of the California Department of Health Services to Mr. Van Stockum, which was sent to "re-confirm" that the County would remain the lead agency with respect to cleanup of the pond. Ex. 10131.

reply to their proposal to treat this waste material on-site, *since our Department is not authorized to approve treatment or on-site disposal methods under state law and the memorandum of understanding with your Department.*"

So while the County was the "lead agency"[59] with respect to the closure of the McLaughlin Pit, it had correctly determined that it simply did not have the legal authority to approve a burn or encapsulation of any ash in the surface impoundment.[60] Van Stockum Dep., 103:8-105:8. There is no evidence that Mr. Bellomo ever responded to this letter to either grant or deny Mr. McLaughlin permission to close the surface impoundment.[61] According to Mr. McLaughlin, Mr. Van Stockum never advised him that State approval was still needed, and Mr. McLaughlin was not copied on the December 3, 1987 letter. McLaughlin Dep., 322:10–323:10. The hazardous waste in the McLaughlin Pit was burned the day after the letter was sent, without the requisite State approval.

k. Without Authorization, Pyrotronics and Western Precast Products, Inc. Burned Approximately 54,000 pounds of Class I Hazardous Waste in the McLaughlin Pit; Buried the Pit and Paved Over It - While the Regional Board and the City Watched and Approved

In November 1987, the City of Rialto Fire Department issued Red Devil Fireworks a permit to burn 5.5 tons of "hazardous waste – pyrotechnic materials" between November 17 and December 17, 1987 at the 3196 North Locust Avenue property.[62] Ex. 10138. The permit, intended to allow for disposal of the waste that remained in the

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[59] Mr. Van Stockum testified that the concept of a "lead agency", in this sense, merely meant that the County would act as a clearinghouse; not that it had authority to sign off on the closure plan. Van Stockum Dep., 92:3-93:13.

[60] According to Mr. Berchtold, the Regional Board also lacked authority to authorize the burn of Class I hazardous waste, and could not approve closure before approval was given by DHS or DTSC. Berchtold Dep., 298:4-8; 299:1-24.

[61] Attached hereto as Exhibit 11233 respectively, are a subpoena for certain records from DTSC and their response with some documents, but nothing indicating an approval to either burn the material or encapsulate it.

[62] Although the permit was issued for the disposal of 5.5 tons of waste, Mr. McLaughlin estimated that, as of November 1987, there were actually ***25 tons*** of material remaining in the pit and specifically recalled that the estimate of 5.5 tons was too low. McLaughlin Dep., 303:15–304:5. Other evidence indicates that over *54,000* pounds of Class I hazardous waste were burned. Ex. 10138 (12/17/87 Letter); Ex. 11154.

McLaughlin Pit, was signed by Pedro Mergil on behalf of Red Devil, (Mergil Dep., 111:10-112:6), and Thomas McVeitty on behalf of the RFD. Mr. McLaughlin clearly testified that SCAQMD authorization was required for the burn, (McLaughlin Dep., 56:9-57:6; 75:12-21; 166:21-25; 182:1-11), and there is no doubt that SCAQMD approval was in fact necessary, but the permit was *not* approved by the AQMD, and there are no records from the AQMD indicating that they ever approved the burn. Thrash Dep., 48:10-50:10; Exs. 10132, 11154.[63] A number of deponents from the Rialto Fire Department and others indicated that it was the Fire Department's responsibility to secure the AQMD's approval, but apparently they never did so. Wells Dep., 46:4-13, 61:3-10; Schroeder Dep., 180:14-23; Ex. 10357 (9/28/87 letter from T. McVeitty to R. Apel indicating that in order for a fireworks company to obtain a permit to burn waste fireworks, it would need to apply for and obtain an AQMD permit that would then be countersigned by the RFD); *see also* Ex. 11229. At Exhibit 11229 is a copy of the then applicable versions of SCAQMD Rules 208 and 444, which make absolutely clear that the South Coast Air Quality Management District must issue a permit for any open burning. In short, the City of Rialto, Red Devil, and Western Precast Concrete (Mr. Thompson's company and Mr. McLaughlin's employer) failed to obtain the necessary SCAQMD permit to burn the waste in the McLaughlin Pit.

Red Devil was assigned the responsibility for conducting the burn by virtue of a casual arrangement among Red Devil, Mr. McLaughlin and Western Precast. Red Devil was apparently chosen because it had experience burning fireworks waste material. McLaughlin Dep., 297:10-20. According to Mr. McLaughlin, personnel from his firm were simply at the burn as "observers." McLaughlin Dep., 296:8–297:9. The decision to have Red Devil perform the burn was communicated to members of the Regional Board, the

[63] Attached as Exhibit 11231 are the subpoena and response from the South Coast Air Quality Management District regarding the request from Goodrich Corporation for records regarding any burning of the McLaughlin Pit contents in December 1987 and confirming that the South Coast Air Quality Management District has no records indicating they approved the burn.

San Bernardino County Department of Health, and the California Department of Health Services. McLaughlin Dep., 298:22–300:6, 301:7-11, 302:10-18.

The burn took place on December 4, 1987, with the ignition starting at approximately 11:00 a.m. McLaughlin Dep., 311:6-8. Preparation for the burn began around 8:00 a.m., as follows: the chain-link fence around the pond was taken down, four 55-gallon drums of diesel fuel (over 200 gallons total) were poured into the pit, and then a "very significant" amount of black powder, approximately one half-inch thick, was placed on top so that it covered the entire surface area of the pond. Next, six to eight pairs of magnesium flares, each approximately six to eight inches long, were placed at various locations around the pond, on top of the black powder, and tied together. The chain-link fence was laid across the pit to prevent debris from leaving the pond in the event of fires or explosions. McLaughlin Dep., 173:7-22. At Exhibit 11226, there are photographs obtained from the County of San Bernardino files showing the preparation of the McLaughlin Pit just before the burn and then after the burn. One photograph shows the black powder being sprinkled on the pit contents and another shows a spectacular explosion and cloud of smoke. The contents of the pit are clearly visible in another photograph and the cracked and chipped sides of the pit are also visible. They offer dramatic proof of the substantial quantity of waste pyrotechnic material that had accumulated in the pit and the illegal and dangerous method of closure that the City of Rialto, Red Devil and Western Precast Concrete all collaborated in orchestrating (without the approval of the County, State of California, EPA or the SCAQMD.)

The burn lasted for approximately eight hours, burning "bright white" for about four hours, and Mr. McLaughlin testified that he remained at the site for the duration of the burn. McLaughlin Dep., 318:14–319:6. There were several explosions during the burn. McLaughlin Dep., 174:19-21; Ex. 10143, 10849 (12/12/1987 letter from Terry O'Brien to Steve Van Stockum noting that "[n]o one was injured by the exploding hand grenades or fireworks."); Cartagena Dep., 201:1-12. Ex. 11226 (photos).

Mr. Brown from the Regional Board was present for the site preparation before

the burn, and remained on-site for the entire duration of the burn. McLaughlin Dep., 172:16-18; 174:3-10; 311:6–312:8. He did not express any dissatisfaction with the burn or the decision to dump gasoline, black powder and other material on the pond to prepare it for burning. McLaughlin Dep., 319:14-21, 173:7-22. Nor did he ever apparently express dissatisfaction or concern with the fact that 54,000 pounds of Class I hazardous waste was burned on his watch without the requisite legal authorization needed from Federal, State and/or local agencies. *See* Berchtold Dep., 312:25-313:9.

Multiple witnesses confirm that City of Rialto Fire Department personnel were also present for the burn. McLaughlin Dep., 174:3-8; 302:1-8 (There was a "big red truck with people attached"); Cartagena Dep., 104:10-19; 202:14-16. Mr. Van Stockum with the County and his department were invited by Mr. McLaughlin to attend the burn, but they did not do so. McLaughlin Dep., 317:6-25. Notably, when Mr. McLaughlin invited Mr. Van Stockum from the County of San Bernardino to the burn, Mr. Van Stockum never mentioned that State approval was required before the burn could go forward, as he had written in a letter sent to DTSC on December 3, 1987, the day before the burn. McLaughlin Dep., 330:3-15.

On December 9, 1987, Mr. McLaughlin personally delivered a letter to Mr. Van Stockum, which was intended to summarize the key events concerning the closure of the pond. Ex. 10143. The letter stated that the burn occurred on December 4, 1987; that on December 7 the pit was raked to insure there was no unstable ordnance under the surface; and that on December 8 residual samples were taken from four random points in the middle of the pit, consolidated, and sent to Brown and Caldwell Laboratory in Pasadena for analysis. According to the letter, the analysis demonstrated that "all metals of concern were apparently vaporized." Ex. 10143.

Mr. McLaughlin's letter concluded that "the site is now considered non hazardous"; requested Mr. Van Stockum's concurrence; and included a block for the County's signature. Notably, Mr. McLaughlin did not copy the Regional Board, the SCAQMD, USEPA or the State DTSC on this letter – all agencies which would have

needed to approve the treatment of hazardous waste within a surface impoundment and the closure. Instead, the letter was sent only to the County, after the burn, and even though the County could not and would not have approved the burn in any event. *See* Van Stockum Dep., 103:8-105:8.

The County did not sign Mr. McLaughlin's letter, but Mr. Van Stockum did respond by letter dated December 15, 1987. His letter stated that "[a]fter reviewing the lab analysis of the residual left in the Western Precast Products 'pit' after the December 7, 1987 burn, it is this Department's opinion that this residual is no longer classified as a hazardous waste." According to Mr. McLaughlin, this letter "was just as good" as a signature to his letter, and it effectively ended his involvement with the hazardous waste surface impoundment. McLaughlin Dep., 327:8-13. But Mr. Van Stockum's deposition testimony makes clear that his letter should not have been interpreted as the County's sign off on the burn or approval to simply bury the surface impoundment and pave over it:

> Q: That's the December 15, 1987 letter; right? I'll wait for a minute, let you get that in front of you.
>
> A: Yes, that is.
>
> Q: *Now, that first sentence, we've talked about that a little bit. She just asked you a question about it and I want to make sure I understand. If the City of Rialto says, "We saw that first sentence and we read that as a sign-off by the County of San Bernardino that it's now okay to fill in the pit, put dirt right on top of the ashes that are there and pave over it and make that a concrete pipe manufacturing site", they'd be wrong about that, wouldn't they?*
>
> A. *I believe so, because it doesn't – that isn't what it says.*

Van Stockum Dep., 152:14-153:3 (emphasis added). Mr. Van Stockum also testified that the County did not have authority to authorize closure of a hazardous waste facility, including the McLaughlin Pit, by encapsulation or otherwise. Van Stockum Dep., 46:3-7; 85:13-86:15; 90:5-20. Mr. Van Stockum's superior, Richard Roberts, the Director of the San Bernardino County Health Department in 1987, confirmed that same conclusion. Roberts Dep., 48:18-23, 50:19-25, 51:1-5.

Mr. Van Stockum's December 15, 1987 letter also requested that "Western Precast Products provide this Department with a letter from the Rialto Fire Department which explains why this burn was ordered, *since no approval to "treat" the then hazardous waste was granted by the State Department of Health Services.*" According to Mr. McLaughlin's testimony, this letter was "the first time there was any indication from the County that such an approval would have been required." McLaughlin Dep., 329:2–330:2; *see also* McLaughlin Dep., 328:7-10. Mr. Van Stockum never received such a letter from the City of Rialto Fire Department. Van Stockum Dep., 117:12-22.

On December 17, 1987, Terry O'Brien of Western Precast replied to Mr. Van Stockum's December 15 letter, and stated that the burn was conducted by Red Devil Fireworks, on material deposited into the surface impoundment by Red Devil, and on Red Devil's property. The letter asserted that the City of Rialto Fire Department permitted the burn because it was clear that the material was hazardous. Mr. McLaughlin didn't recall any discussions regarding the closure after December 1987; and never heard any dissatisfaction expressed by Mr. Van Stockum, Mr. Brown, or anyone else from the County, Regional Board or State Department of Health Services. McLaughlin Dep., 332:6–335:12.

On July 12, 1988, Mr. Brown inspected the former location of the McLaughlin Pit pursuant to Order 78-96. A written report of the inspection prepared that date was approved by Gary Litton on July 13, 1988. Ex. 10368. The report recommended the rescission of Order 78-96, on the purported basis that the McLaughlin Pit had been "appropriately closed." The report stated that the property on which the McLaughlin Pit was located had been sold to Western Precast Products, Inc., "pursuant to the stipulation that [Western Precast] would close the pit." Apparently relying on the single sample that may have been collected two to four inches below the pond, Mr. Brown's report made the unqualified conclusion that "[n]o evidence of leakage from pit was found." The report continues:

> Therefore, permits were obtained and contents of the pit burned. Ashes were appropriately disposed and pit covered over. Red Devil Fireworks, who are adjacent to Western Precast, contracted to burn the material along with some of their own.

But as will be discussed below, the process by which the remaining material was burned and then covered was plainly inappropriate under Subchapter 15; indeed, it is clear that the Regional Board simply ignored these regulations – the very regulations that it was required to enforce and that were designed, in part, to protect the quality of the waters of the State of California. On February 8, 1991, the Regional Board rescinded Order 78-96 without ever testing for perchlorate or any other chemicals in the soil or groundwater, other than the two shallow soil samples for four heavy metals, and without making any required actions to comply with Subchapter 15. Ex. 10366.

I. Data Indicates McLaughlin Pit Is a Major Source of Perchlorate Contamination

The McLaughlin Pit is undoubtedly a major source of perchlorate contamination in the Rialto/Colton Groundwater Basin as tens of thousands of gallons of unregulated wastes were dumped into the surface impoundment for over a decade. This is confirmed by the site findings. In fact, it is the only confirmed source of groundwater containment on the 160 acre parcel. Cavanaugh Dec., ¶ 62. In March 2006, with the approval of the Regional Board staff and USEPA, Emhart and Pyro Spectaculars drilled two soil borings near the McLaughlin Pit. Ex. 11221 (Environ 2007). These samples revealed the highest soil concentrations of perchlorate throughout the vadose zone ever found in the Rialto/Colton Groundwater Basin, ranging from 205,000 u/kg at 20 feet to 1,800 u/kg at 400-440 feet. *Id.* at App. A, Table A 2. And in April 2006, sampling taken from a monitoring well immediately downgradient of the McLaughlin Pit, which was installed by Goodrich, contained 10,000 ppb of perchlorate, the highest concentration ever recorded in any groundwater sample in the Rialto/Colton Groundwater Basin. *Id.* at App. A, Table A 6.

In a confirming statement, Mr. Berchtold, Advocacy Team member and Assistant

Executive Officer of the Regional Board, testified in deposition that "the highest concentration of perchlorate found adjacent to a source were the samples taken from the McLaughlin Pit." Berchtold Dep., 149:23-150:3; *see also* Berchtold Dep., 97:23-98:2 (acknowledging data from surveys shows "releases of perchlorate in the vicinity of the McLaughlin Pit."); *see also* Saremi Dep., 591:19-23 (McLaughlin Pit past and present source of perchlorate contamination in Rialto/Colton aquifer).

And it should come as no surprise that the construction of the McLaughlin Pit as a simple residential swimming pool, and nothing more, was wholly unsuitable for use as a hazardous waste liquid surface impoundment. English Dec., ¶¶ 7, 48-55. It is disappointing that no staff personnel of the Regional Board ever questioned the suitability of a gunite and plaster swimming pool for this purpose. As Mr. English's Declaration makes clear, there is no doubt that the sides and bottom of the McLaughlin Pit leaked into the surrounding soils and down to groundwater because the gunite material is not impermeable and unless the thin plaster coating is carefully maintained it can readily chip and delaminate (as the photographic evidence readily confirms was the case here). English Dec., 7-25, 48-55. Residential swimming pools are not made to hold explosive material that auto-ignites – it seems like common sense but this simple fact escaped all of the members of the Advocacy Team. In fact, the McLaughlin Pit routinely leaked after the first few years of operation at best (English Dec., ¶¶ 51-54), and of course it also overflowed as the evidence clearly shows. But the dramatic proof is in the current soil data taken from beneath the McLaughlin Pit today that shows the highest levels of perchlorate contamination in the Rialto Colton area and pinpoints the McLaughlin Pit as the key source of the groundwater contamination in the Basin.

D. Multiple Fires and Explosions at the Pyrotronics' Facility Caused Spills and Releases of Perchlorate

Pyrotronics' Rialto operations were characterized by explosions, fires, and other incidents involving the spilling of firework composition material. Two major explosions occurred in 1968, shortly after Pyrotronics began operating. The first explosion took

place on February 15, 1968 in one of the press rooms, and caused two or three fatalities, injured nine others, and destroyed as many as twenty buildings. Ex. 10010; Hescox Dep., 328:3-12 and Ex. 10805. The press room involved in the explosion was located west of the main parking lot, in Fire Zone 2, and was used to press potassium perchlorate-containing "gerbs". Hescox Dep., 381:16-382:18; 383:6-384:23, 545:9-11; Moriarty Dep., 89:11-19. The City of Rialto Fire Department put the fire out, although fire hoses that were maintained by Pyrotronics "all over the plant" were probably used as well and witnesses recall seeing water on the ground after the incident. Hescox Dep., 327:21–328:2, 328:18–329:5. This press room was never reconstructed; instead it was dismantled and later used as a burn area to dispose of waste material. Hescox Dep., 386:9-25.

The second explosion, in May 1968, occurred in a remote mixing room and seriously injured two individuals. The City of Rialto Fire Department incident report noted there was an "[e]xplosion of powder in a metal building with total destruction of the building and critically injuring two employees . . ." Exs. 10005, 10679; Moriarty Dep., 76:12-16. The mixing room where the explosion occurred was known as Building 71. Ex. 10970. Mergil Dep., 189:20-190:3; Moriarty Dep., 76:12-77:2. Apparently, the accident was the result of an attempt by certain employees to increase their break time by manually pushing gondolas carrying powder into the mixing room. Moriarty Dep., 77:3-21. After this incident, Pyrotronics reverted to the old system of hand mixing chemicals in smaller quantities; the automated system was never replaced. Moriarty Dep., 78:11-18; 130:1-19.

Mr. Hescox, who was sent to work at the Rialto facility in 1968 as a result of these two explosions, testified that they were caused by "an accumulation of too many chemicals." Hescox Dep., 74:12–18. He also testified that the explosions required "almost every building" to be rebuilt. Hescox Dep., 72:1-2.

Many other explosions and fires at Pyrotronics' facility are documented through 1989. These include a 1971 fire in the Fireworks Burn Pit, which consisted of "some

type of powder" among other materials. Ex. 10025. RFD records also indicate that additional fires and explosions in or around the burn pit occurred in 1973, 1976 (twice), 1977, 1979, 1983 (twice) and 1985. 10033, 10044, 10046, 10065, 10636, 10077, 10080. And on December 24, 1980, an explosion "totally destroyed" a storage building used to house consumer fireworks. Ex. 10645; Apel Dep., 232:17-233:8; Exs. 10072, 10645. Apparently because of the frequency and severity of fires and explosions at the facility, Pyrotronics even maintained its own fire department and two fire trucks in Rialto. Moriarty Dep., 170:1-13; 171:6-9; 172:4-9.

The frequency of these fires and explosions is indicative of careless practices, and resulted in the spreading of fireworks debris, containing perchlorate, across large areas of the 160-acre parcel. Notably, many of these incidents occurred in the vicinity of raw perchlorate and/or fireworks containing perchlorate.

E. California Fireworks Display Company and the Testing of Aerial Display Fireworks

California Fireworks Display Company was Pyrotronics' aerial display fireworks division, and it manufactured, assembled, imported, stored, and tested fireworks on the 160-acre parcel from approximately 1968 until 1979, when the division was sold to another fireworks operator. Hescox Dep., 77:15-21; Exs. 10029, 10031, 10034; Bybee Dep., 100:1-101:9 (California Fireworks Display manufactured Class B aerial shells, some of which contained potassium perchlorate).

California Fireworks Display Company tested display fireworks in the south-southwest portion of the property, near the Fireworks Burn Pit (in Fire Zone 13), and the record includes multiple permits for testing of display fireworks which were issued to the company by the RFD. Exs. 10034, 10037, 10038, 10039, 10042, 10043, 10045, 10047, 10050, 10797; *see also* Hescox Dep., 172:1-20; 173:21–174:2; 177:19-22. Mr. Hescox testified that California Fireworks Display Company tested two to three times per month in the spring and summer. Hescox Dep., 174:9-20.

Witnesses have testified and documents confirm that a certain percentage of

aerial display fireworks fail to completely combust in the air and fall to the ground either unburned or partially burned.[64] Hescox Dep., 291:3-12, 367:15-370:3; Shilling Dep., 269:8-23 ("Always there's duds."); Ex. 10362 at pages 3, 13, and 39. Evidence further indicates that "stars", a component of aerial fireworks which are often made of perchlorate, fell to the ground in the location where aerial display fireworks were tested. Pyrotronics employees were trained to recognize whether the aerial shells being shot actually detonated or not; and would patrol or clean up the area where duds fell. Hescox Dep., 367:24–368:17. These "misfires" just happened on occasion, and it was well known that a small percentage of shells would be defective Hescox Dep., 368:9-13; 369:14-370:3. Mr. Moriarty testified that the company sought the RFD's "standby" during display fireworks testing in case anything "went wrong"; and noted that "the fallout could easily set fire to the brush, and in the high wind, it was a disaster . . ." Moriarty Dep., 372:1-10; 372:17-25.

F. Pyrotronics' Testing of Consumer Fireworks

Pyrotronics also tested consumer fireworks on the 160-acre parcel, frequently at a location that Mr. Apel described as a "dirt mound with a round hole". Apel Dep., 351:6-21. Testifying about what appears to be the same location, Mr. Mergil described it as a "test tunnel"[65] located near the Fireworks Burn Pit; although he indicated that testing was later moved to a location near the Burn Pipe in Fire Zone 2 because it was closer to their operations.[66] Mergil Dep., 335:15-337:10; Ex. 10958. Consumer fireworks were also tested in the parking lot next to the office; originally this location was dirt but it was later paved with asphalt. *Id.; see also* Moriarty Dep., 108:14-21; 167:2-5; 370:2-5; 371:1-20.

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[64] A Draft Report issued by the Massachusetts Department of Environmental Protection in August 2005 confirms that repeated aerial fireworks displays can cause perchlorate contamination in soil and groundwater. Ex. 11176.

[65] Apparently, material was also burned at the "test tunnel" location in the earlier years of Pyrotronics' operations. Mergil Dep., 338:12-17.

[66] Ms. Shilling, who worked for Pyrotronics from 1979 through 1989, testified that Pyrotronics tested consumer fireworks in the Fireworks Burn Pit, or at least "in the general area where I though the pit was." Shilling Dep., 64:9-16; 268:1-15; 270:18-25.

Pyrotronics tested consumer fireworks that were manufactured by its Apollo division, with Richard Doerr and Fred Cairo primarily responsible for these tests. Mergil Dep., 173:3-19; Shilling Dep., 35:4-11, 16-25. Pyrotronics also tested fireworks imported by its Red Devil division. Apel Dep., 353:12-15. During her tenure, Ms. Shilling called the AQMD to ensure that Pyrotronics had clearance in advance of consumer fireworks tests. Shilling Dep., 35:16-18.

Mr. Apel testified that Pyrotronics followed the requirements established by the Consumer Product Safety Commission, and that samples were tested from each shipment received by Pyrotronics. Apel Dep., 352:5. According to Mr. Apel, Pyrotronics tested consumer fireworks about once per week, with testing lasting anywhere from one hour to a full day, although during peak season samples needed to be pulled for testing on almost a daily basis. Apel Dep., 351:25-352:11; 352:17-25; 378:4-15.

V. TROJAN FIREWORKS/ASTRO PYROTECHNICS

In approximately 1971, Trojan Fireworks began manufacturing consumer and display fireworks at 2298 West Stonehurst in Rialto and in and around the nearby former military bunkers. *See* Hescox Dep., 49:17- 50:18. Trojan operated in Rialto until 1988, when its display fireworks division, Astro Pyrotechnics and its consumer fireworks division, Freedom Fireworks, were separately acquired by other fireworks companies (hereinafter the pre-April 4, 1988 activities of these entities will be collectively referred to where appropriate as "Trojan").

A. Trojan's Manufacturing Operations

Similar to Pyrotronics' manufacturing operations, many of the consumer and display fireworks manufactured at Trojan's Stonehurst facility contained the oxidizer potassium perchlorate, and potassium perchlorate constituted a substantial percentage of the pyrotechnic composition material at Trojan by weight. Cunard Dep., 467:21-468:7 (perchlorate, including potassium perchlorate specifically, was an ingredient in many fireworks manufactured by Trojan); Carlton Dep., 110:15-19, 111:23-112:2 (potassium perchlorate was the second most commonly used oxidizer by Trojan), 160:12-21

(potassium perchlorate used as the oxidizer in the "Nite Howler"), 171:11-24 (potassium perchlorate used as the oxidizer in "Whistle Pete"), 301:25-302:2 (mines manufactured at plant contained potassium perchlorate), 362:6-17 ("Comets" and "Stars" contained potassium perchlorate), 364:24-365:13 (beginning in approximately 1980, stars included within the "Meteoric Shower" contained potassium perchlorate), 390:13-16; 392:15-393:1 (certain "specialty" fireworks items contained potassium perchlorate), 464:19-23, 465:3-5; 465:13-23 (Trojan used potassium perchlorate in the manufacture of Nite Howlers, Whistling Petes, and Niagara Falls); 543:20-544:5 (potassium perchlorate was the only oxidizer used in Nite Howlers and Whistling Petes); Veline Dep., 87:8-21, 88:16-19 (Trojan used potassium perchlorate in the production of stars, whistles, and possibly fountains.), 222:19-223:8 (Colored stars, whistles, and one or two safe and sane press items contained potassium perchlorate), 228:6-229:13 (Trojan made "Niagara Falls" fireworks, which contained potassium perchlorate), 242:19-244:3 (The "prime" which coated the outside of "stars" contained potassium perchlorate), 281:16-23 (50% to 60% of the composition used in whistles was perchlorate); Cunard Dep., 467:21-468:7; Autote Dep., 79:2-7 (both flash powder and whistle powder contained perchlorate), 143:10-144:5 ("we used potassium perchlorate to make pyrotechnics"), 173:14-19, 198:17-20. According to a computer printout produced by Leo Autote, a third of the approximately 150 firework formulas used by Trojan included potassium perchlorate, and on average, potassium perchlorate accounts for 50% of the composition of products that contain potassium perchlorate. Ex. 11134; Autote Dep., 453:20-455:10 (identifying formulas in Ex. 11134 as being those used at Trojan before 1988); *see also* Ex. 11135 (selected documents from Stuart Carlton's notes indicating wide spread use of perchlorate); Autote Dep., 456:24-458:16 (identifying exhibit 11135 as "notes of fireworks compositions and effect studies by Stuart Carlton" made "during the Trojan years"); Ex. 11138, 11136, 11140, 11141 (formulas containing potassium perchlorate).

In addition to potassium perchlorate, Trojan also used ammonium perchlorate in the manufacture of several fireworks products. Carlton Dep., 542:18-543:5 (ammonium

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perchlorate used periodically in the production of stars), 577:17-24 ("Little Flasher" contained ammonium perchlorate); Veline Dep., 208:19-209:12 (ammonium perchlorate was used in some stars and a strobe device), 317:16-21 (60% of the composition used in a strobe was ammonium perchlorate); Autote Dep., 252:20-253:8 (the "Flasher" contains ammonium perchlorate), 487:3-14 (the formula for the blue-tip stage gerb was 45% ammonium perchlorate); Exs. 11139, 11137, 11140, 11141 (firework formulas containing ammonium perchlorate from 1987). Ammonium perchlorate was an ingredient in seventeen products identified on the print out of Trojan's fireworks formulas, and ammonium perchlorate makes up, on average, 37% of these seventeen products compositions. Ex. 11134.

1. Purchase and Storage of Raw Chemicals Including Perchlorate

According to Trojan's former plant manager, Mr. Carlton, Trojan typically ordered a few thousand pounds of perchlorate at a time, and because chemicals were generally ordered in quantities sufficient for six months, approximately twice a year thousands of pounds of potassium perchlorate would be delivered to the Trojan facility on Stonehurst. Carlton Dep., 381:8-23; 382:11-15; 382:23-25. Indeed, Mr. Carlton could not recall a year during his eleven-year tenure at Trojan that he did not place an order for potassium perchlorate. Carlton Dep., 384:12-15.

At Trojan, potassium perchlorate and other oxidizers were received in "large quantities", which were then stored on-site and used as needed. Carlton Dep., 112:14-23, 473:1-9, 474:6-12 (between 1981 and 1988, Trojan would keep between 500 and 5,000 pounds of perchlorate on the property). Oxidizers, including perchlorate, were received in metal drums and in paper sacks, typically weighing fifty to one-hundred pounds. Carlton Dep., 113:14-114:18; Cunard Dep., 205:4-13 (potassium perchlorate was stored in drums). The metal drums of oxidizers were stored in approximately two to three trailers at the north end of the Stonehurst property. Carlton Dep., 426:20-427:13; Veline Dep., 23:16-21 (oxidizers were stored in a shipping container by the weighing and mixing area upon receipt); Autote Dep., 137:20-138:16, 142:7-144:5 (30 gallon metal

drums containing perchlorate were stored in the trailers). Oxidizers were also stored in a "truck box", which had been removed from a truck chasis, located near the mixing rooms. Autote Dep., 440:14-441:20. Moreover, at some point, Trojan purchased a large amount of chemicals from Pyrotronics and leased an additional building to store those chemicals at the 3196 N. Locust facility. Autote Dep., 521:15-522:10, Ex. 11133.

2. Weighing and Mixing of Pyrotechnic Composition

Like the process at Pyrotronics, Trojan's manufacturing process began with the weighing and mixing of certain chemicals to create pyrotechnic compositions for use in Trojan's fireworks products. During peak season, Trojan made about three to four batches of mix per day for most fireworks items and about thirty to sixty batches of mix per day for "cones". Carlton Dep., 139:11-140:5.

Before beginning the weighing and mixing process, the necessary chemicals had to be procured from the storage areas described above. Drums of oxidizers, including perchlorate, were taken from storage to a weighing room (described as a portable building or shed near or connected to a mixing room) where the chemicals needed for a certain fireworks compositions would be weighed out. Veline Dep., 235:2-10; Autote Dep., 159:15-161:9 (drums of perchlorate were taken to mixing room, perchlorate was scooped out of the drums with a metal scoop and weighed before mixing); Veline Dep., 89:6-91:23 (describing the mixing and weighing rooms), Autote Dep., 163:2-5 (describing the mixing and weighing rooms). Mr. Veline testified that oxidizer was stored in the weighing room in approximately 30 gallon metal drums, and that at times multiple drums of oxidizer were stored in the weighing room. Veline Dep., 96:2-7, 98:6-99:1, 109:7-15; Carlton Dep., 126:14-127:16; Cunard Dep., 202:17-203:7 (Main chemical storage area in trailers but some chemicals always kept on hand in the mixing room). And as needed, the supply of chemicals was replenished from storage. Carlton Dep., 428:12-24.[67]

[67] When the drums were nearly empty they would simply be "turned over and shaken into a receiving container, . . . a cardboard keg," and Mr. Carlton recalled that empty perchlorate drums were probably washed out and used as trash containers. Carlton Dep. 428:12-24.

In the weighing room, oxidizer would be removed from the metal drum with an aluminum scoop and placed on a scale with a 25 pound capacity. Veline Dep., 89:6-91:23, 110:1-16. After weighing the oxidizer and the other chemicals to be used in the composition, all the chemicals were placed into the same container and carried by hand to the mixing room. Veline Dep., 114:20-115:13; 122:8-13 (chemicals were placed into a 3 to 5 gallon container), 89:6-91:23, 113:2-5; Autote Dep., 204:16-206:1 (chemicals were placed into a 25 gallon cardboard keg), 206:2-4.

The actual mixing at Trojan was done entirely by hand[68] in an aluminum bowl (described as an ordinary "soup kettle") that had a capacity of approximately 10 to 20 gallons. Carlton Dep., 124:16-17; 124:19-125:20; Veline Dep., 99:11-15 (mixed in a 10 gallon aluminum pot). The composition was mixed in one bowl, and then screened into another bowl and mixed by hand, and then screened back into the first bowl and mixed by hand again. Carlton Dep., 134:8-20; *see also* Veline Dep., 125:7-128:18 (describing mixing procedure). All of the mixing at Trojan was done in these "soup kettles", except the composition used in whistles and the composition used in a "stump remover". Autote Dep., 198:1-7, 200:15-24. The composition used in whistles, which contained perchlorate, was mixed in a square wooden box to minimize the friction and impact that occurred in the mixing process because the whistle composition was a more "sensitive composition." Autote Dep., 198:10-20. And the composition used in the stump remover was mixed in a "household-type cement mixer." Autote Dep., 200:15-202:14.

After mixing, water, taken from a bucket in the mixing room, was added to the composition and the composition was mixed again by hand. Veline Dep., 133:7-134:6, 137:2-5. Finally, the mixed composition was poured into 2 ½ gallon cardboard kegs and taken to the press room. Carlton Dep., 140:11-25; 142:3-143:2; Veline Dep., 139:13-140:1 (mixed composition was put into the same container that it was brought into the mixing room in, and then that container was taken to the press room).

[68] The mixing was done by an employee's gloved hand. Carlton Dep., 135:2-7; Veline Dep., 128:11-129:1.

3. Waste Generated in the Weighing and Mixing Process

Pyrotechnic "live waste", which Mr. Carlton defined as any material with enough pyrotechnic composition to sustain combustion and often included perchlorate, was generated as an unavoidable by-product of the weighing and mixing process. Carlton Dep., 162:1-12. Pyrotechnic dust created by the weighing and mixing of pyrotechnic compositions would settle on the walls and floor of the weighing and mixing rooms. Autote Dep., 165:8-21. In fact, because of the amount of dust generated during weighing and mixing, employees involved in those processes had to wear "dust masks". Autote Dep., 162:13-19, 165:2-12. Additional live waste was also created in the weighing and mixing rooms when employees inevitably spilled chemicals while weighing, mixing, and transporting them. Veline Dep., 115:23-117:1, 326:3-9 ("I recall times [chemicals] were spilled on the floor in the weighing room or the mixing room.").

Because of the danger presented by the accumulation of live waste, the weighing and mixing rooms were swept "many times" a day depending on which chemicals were being mixed or the amount of composition that had been spilled that day; the waste that was swept up was then temporarily placed in a container in the room. Autote Dep., 167:7-14; Carlton Dep., 136:5-9; 147:5-19 (composition that would occasionally fall out of the mixing bowl would be swept off the ground); Veline Dep., 117:3-118:15; Autote Dep., 165:8-21 (powder dust from weighing operation would get on walls and floor and would then be swept up). These sweepings would eventually be added to the collection of "live waste" at the plant, which also included the excess composition from the press rooms. *See* Veline Dep., 140:9-143:1 (spilled material would be swept up and taken to building number 10); Cunard Dep., 226:10-229:11 (excess powder from mixing operation would be put in a fiberboard container and taken to Building 10). On a weekly basis, the weighing and mixing rooms were hosed out with water to further prevent the accumulation of live waste, and the water from the wash out simply spilled out of the door onto bare earth or, depending on the configuration of the portable weighing and mixing rooms, onto the surrounding pavement. Carlton Dep., 492:11-493:15; 493:20-25;

Autote Dep., 169:9-172:7, 263:19-264:4; Schroeder Dep., 76:1-6, 76:8-77:24, 80:11-21.

Employees at Trojan also had to clean residual pyrotechnic composition off of the equipment used in the weighing and mixing operations on a regular basis. The mixing bowls were wiped or dusted out with a brush at the end of the work day, and the screens used in the mixing operation were similarly cleaned with a hand brush before they were used to mix new compositions. Veline Dep., 190:5-191:14; Carlton Dep., 143:25-145:19. In addition, the scale in the weighing room had to be cleaned after weighing a chemical to ensure that the weight of the next chemical would be accurate. Veline Dep., 113:6-114:15. The excess powder produced from cleaning the weighing and mixing equipment was placed into containers in the weighing and mixing rooms and collected with the other "live waste". *See* Veline Dep., 140:9-143:1 (spilled material would be swept up and taken to building number 10); Cunard Dep., 226:10-229:11 (excess powder from mixing operation would be put in a fiberboard container and taken to Building 10).

In addition to the actual weighing and mixing of chemicals at Trojan, the strong winds, which are common in Rialto, further spread pyrotechnic powder throughout the facility. Because the doors of the portable buildings used for weighing and mixing were always kept open, these winds would blow pyrotechnic composition out of the mixing and weighing rooms, and into the surrounding areas. *See* Autote Dep., 163:2-13 (doors always remained open in case a fire or explosion occurred in the building), 181:13-17 (recalling that powder dust was occasionally blown out of the weighing room).

4. Fireworks Press Operations

Trojan used at least three five to six feet tall hydraulic presses in making certain fireworks products at its Stonehurst operation. Cunard Dep., 451:21-452:4. After the mixed pyrotechnic composition was delivered to the press room, a pressman would scoop the composition onto a plate with approximately 49 holes in it, and use his hands to load the composition into each of the holes in the plate. Veline Dep., 143:21-144:10; Veline Dep., 143:25-146:10; Carlton Dep., 149:20-150:4 (Trojan's presses usually produced 49 items at a time). The pressman would compact the composition into the

holes with his fingers so that when he picked the plate up the composition would remain in the holes and not fall out. Veline Dep., 146:3-16. Any excess composition left on the plate after the holes were filled was swept on to the table on which the plate was being loaded, and the pressman would scoop this leftover composition off the table with his hands and use it in loading the next plate. Veline Dep., 145:8-146:3.

The plate, once loaded with pyrotechnic composition, was slid into place on the press. Veline Dep., 146:18-25; Carlton Dep., 150:1-16; 154:4-155:4. The pressman would pull a lever and the press would compact the powder composition into a certain product. Veline Dep., 147:8-148:6, Carlton Dep., 154:4-155:4. The compressed fireworks products would then be sent to another area of the plant for finishing or drying. *Id.*

Because the pressing process involved the use of loose pyrotechnic composition, the pressing process, like the mixing and weighing processes, also generated "live waste". Carlton Dep., 162:1-12; Autote Dep., 248:18-22. After pressing fireworks, live waste would remain on the table and equipment in the press room, and waste would also fall to the floor during pressing. Carlton Dep., 164:10-165:14; Veline Dep., 153:3-154:17. This waste from the press room was swept up and collected at least at the end of each work day when it would be consolidated with the waste from the weighing and mixing operations in a 2.5 gallon cardboard keg. Carlton Dep., 164:10-165:14. In addition, any pyrotechnic composition that was not used in the pressing was collected and handled in the same manner as other live waste at the Stonehurst facility. Carlton Dep., 202:21-203:14.

Like the mixing rooms, the press rooms were washed out with water on a weekly basis to ensure that no live waste remained in the rooms, and the runoff from the washing was allowed to run out the door of the building and onto the ground. Carlton Dep., 494:1-5. Further, because the use of hydraulic presses is necessarily a "messy" operation, Trojan regularly used solvents to clean accumulated grease and hydraulic fluid off the presses. Cunard Dep., 455:23-456:1, 456:6-9; Carlton Dep., 495:7-8

(solvents were used at Trojan).

B. Trojan's Storage of Live Waste

Generally, the live waste stored at Trojan consisted of production waste, "off-spec product" manufactured at Trojan, returned firework items, and damaged or faulty imported firework material. Ex. 10116; Autote Dep., 529:7-530:2. Most of the live waste from Trojan's operations was kept in Building 10 (identified as such on exhibit 10841), which was designated for temporary storage. Carlton Dep., 170:13-19; 171:3-8; 206:11-19; 479:25-480:11; Veline Dep., 199:10-18 ("leftover compositions" were stored in Building 10). Once a certain amount of waste had accumulated in Building 10, it would be transported to the Fireworks Burn Pit on Pyrotronics' property for disposal. Carlton Dep., 170:13-19; 171:3-8; 206:11-19; 479:25-480:11; 488:14-489:21 (approximately three times a year a Trojan employee would transport live waste to the Fireworks Burn Pit by truck for burning); Autote Dep., 255:3-256:14; Cunard Dep., 230:9-15 (earlier some waste would be burned, and in later years, waste would be accumulated in the Building 10). During times of intense manufacturing at the Trojan facility, live waste would be removed from Building 10 and burned on a weekly basis, but if not much manufacturing was occurring at the facility, live waste could remain in Building 10 for a month before being taken up to the Fireworks Burn Pit. Carlton Dep., 484:7-16. Indeed, Mr. Autote testified that before it was destroyed in 1987, some live waste had been stored in Building 10 for approximately a decade. Autote Dep., 373:1-379:21.

After the explosion that destroyed Building 10 in 1987, Trojan stored the live waste from its operations at Bunker E-1. Carlton Dep., 484:22-487:1, 233:15-25; 234:15-22. According to the minutes of a November 12, 1987 public meeting between Rialto officials and fireworks companies, Mr. Carlton represented that Trojan was then storing 20,000 to 30,000 pounds of chemicals at the Stonehurst site. Ex. 11096. Mr. Carlton later confirmed in deposition that this material included "oxidizers and fuels and other

additives"[69] and that the 20,000 to 30,000 pounds of such material would have been stored in Bunker E-1 at the Trojan facility in or around November of 1987. Carlton Dep., 214:13-215:4; 220:17-24. Further, according to a November 5, 1987 letter from Mr. Carlton to the RFD, 1,000 pounds of "various plant powders" were then stored in Bunker E-1. Ex. 10709; Carlton Dep., 236:9-24, 237:5-12.

Trojan also stored live waste in Bunkers B-1 and B-2. Autote Dep., 256:20-257:17; Carlton Dep., 490:20-24; Autote Dep., 555:14-20 (damaged or faulty import material was stored in the magazine). The waste stored in Bunkers B-1 and B-2 included unusable display and consumer fireworks that had been returned to Trojan. Autote Dep., 550:3-551:19.

C. Consumer Fireworks Testing

At the Stonehurst facility, Trojan tested consumer fireworks that it manufactured and consumer fireworks that it purchased from other manufacturers. The frequency of the testing of consumer items varied from once a day to once per week, depending on the volume of fireworks being purchased or manufactured by Trojan. Carlton Dep., 69:12-20. And testing was most frequent during Trojan's peak manufacturing season, from September through mid-June. Carlton Dep., 70:4-17; Carlton Dep., 69:22-70:2 (Typically two or three pieces of each item would be tested). At his deposition, Mr. Carlton testified that "[a]s long as were pressing anything" testing would occur on at least a weekly basis. Carlton Dep., 196:20-22. Similarly, Mr. Carlton testified that Trojan "thoroughly" tested all of the fireworks items that it purchased from other manufacturers. Carlton Dep., 64:25-65:15 (confirming that such testing occurred between 1977 and 1987).

When fireworks were manufactured, pressmen would typically take two or three of the fireworks made during the day for testing during the lunch break; the pressmen would light several of the manufactured fireworks "just to make sure things were going

[69] According to Mr. Carlton, oxidizers would have comprised at least ten percent of those chemicals. Carlton Dep., 223:23-224:5.

right." Carlton Dep., 196:23-197:6. These tests were done across the driveway from the office, near the break room, on ***"bare earth"***. Carlton Dep., 196:20-197:6; 403:5-7; 403:15-16; Veline Dep., 165:14-18 (fountains and cones were tested near the factory); Veline Dep., 230:1-2 ("Niagara Falls", which contain potassium perchlorate, were tested across the driveway from the office); Veline Dep., 343:10-345:8 (leftover pyrotechnic powder from research and development operations was taken out to the testing area and burned). Powder left over from the day's fireworks manufacturing operations was also often tested in this area to ensure that the powder "burned right." Autote Dep., 91:4-92:12; Autote Dep., 248:8-251:21, 252:8-253:8 (Leftover composition containing perchlorate would be burned at the southwest corner of the site.).

In addition, imported consumer fireworks, some of which contained perchlorate, were also tested east of the B-1 bunker after Trojan received shipments of imported fireworks. Carlton Dep., 573:11-574:2. This testing area near the B-1 bunker, like the testing area near the office, was just an unpaved, unprepared dirt area. Carlton Dep., 247:17-248:25 (The ground near Bunker B-1 consisted of "a mixture of sand and rocks.").

According to Mr. Carlton, after consumer items were tested at the Stonehurst property, the "burned-out paper tubes, paper, cardboard" and other left-over material were placed in trash barrels, and then disposed of at a nearby dump. Carlton Dep., 65:16-66:1; 66:19-67:14, 201:19- 202:19. One witness, however, testified that burnt composition that remained on the ground after testing was never swept up or otherwise disposed of in any way. Veline Dep., 204:4-205:3.

D. Trojan's Testing of Aerial Display Fireworks

Trojan tested display fireworks near Bunker B-1. Autote Dep., 34:17-40:20; Carlton Dep., 247:17-22, Veline Dep., 164:15-165:12, 225:12-226:11 (Roman Candles containing perchlorate were tested in the bunker area); Autote Dep., 34:17-35:24 (in 1976 and 1977, Trojan tested Class B and C fireworks east of Bunker B-1), 38:8-19; Autote Dep., 366:18-367:22. As with consumer fireworks, Trojan always tested a few

items from each shipment of display fireworks that it received to make sure the fireworks functioned properly. Carlton Dep., 298:3-7. For such tests, Trojan applied for and received fireworks display permits from the City of Rialto; the number of permits given to Trojan demonstrates the frequency with which Trojan tested aerial display fireworks at its Stonehurst facility. Exs. 10718, 10726 (pre-1988 public display permits); Carlton Dep., 520:11-521:25 (Public display permits were issued to Trojan for the testing of fireworks).

Witnesses have testified that unexploded "stars" containing pyrotechnic material, including perchlorate, periodically landed on the bare ground in the B-1 Bunker area after display fireworks testing. Autote Dep., 44:1-19, 47:19-49:10. And although it was known that occasionally an unexploded "star" would land on the Stonehurst property, no employee was ever assigned the duty to pick up these unexploded fireworks from the bare ground. *Id.* Trojan employees did, however, always keep buckets of water on hand during testing at the B-1 Bunker area to douse items that either malfunctioned or continued to burn after the test. Carlton Dep., 402:6-403:3.

E. Trojan's Open Burning of Waste Material

1. Fireworks Burn Pit/Pyrotronics Site

Trojan regularly utilized the Fireworks Burn Pit, located on Pyrotronics' property, to dispose of powder, defective fireworks and other live waste. Carlton Dep., 205:4-206:1; 206:4-19; Autote Dep., 278:5-15, 282:9-283:8, 284:8-286:12, 290:6-293:13 (Trojan would typically take a truckload of pyrotechnic waste and damaged or defective fireworks to Pyrotronics to be burned). Trojan's use of the Fireworks Burn Pit likely began in the 1980s; before then, in the late 1970s, Trojan routinely burned its waste material on the bare ground in the B-1 Bunker area. Carlton Dep., 333:24-334:3; 334:14-19; Autote Dep. 38:8-19; 71:6-20; *see* Ex. 10985 (aerial photograph on which Mr. Autote identified the B-1 Bunker area). Mr. Carlton recalled that during his eleven-year tenure at Trojan, waste from Trojan's Stonehurst property was taken to the Fireworks Burn Pit every month or two. Carlton Dep., 205:17-206:19. And in one instance, Trojan sent an entire shipment of "Whistle Petes" from Taiwan for burning at the Fireworks Burn

Pit due to a 20 percent failure rate of the products that were tested.[70] Carlton Dep., 205:4-16; *see also* Veline Dep., 247:1-248:3.

For a time in the mid-1980s, the AQMD prohibited any burning in Rialto, but shortly after the fatal explosion at Trojan in July 1987, discussed below, the AQMD allowed Trojan to resume burning its waste at the Fireworks Burn Pit. Carlton Dep., 263:9-264:12; Cunard Dep., 231:10-23 (AQMD prohibited burning in the mid 1980s). Leo Autote testified that he specifically recalled taking two full stake bed trucks stacked to the top with waste and defective fireworks during this time up to Pyrotronics Burn Pit to be burned. The Pyrotronics Burn Pit was so large, according to his testimony, that he could drive the truck right down into the pit to unload the fireworks boxes and cases before burning. Autote Dep., 291:9-292:14, 293:6-13, 295:25-296:13. During the time that the AQMD prohibited burning, the Rialto Fire Department could have permitted the burning of waste by Trojan, and the other fireworks companies in Rialto, but the Rialto Fire Department declined to do so, and as such, Trojan and the other Rialto fireworks companies were required to stockpile large amounts of live waste which included perchlorate. Carlton Dep., 556:19-559:4.

2. Bunker B-1 burns

In addition to burning its live waste at the Fireworks Burn Pit, Trojan also routinely burned waste firework materials in the area around Bunker B-1, where Trojan also tested display fireworks throughout the duration of its Stonehurst operations. Carlton Dep., 247:17-22. Mr. Carlton indicated that the Bunker B-1 location was "regularly" utilized for burns of smaller quantities of waste in the neighborhood of a few hundred pounds. Carlton Dep., 245:7-13; 245:23-246:9; Carlton Dep., 340:8-23; Veline Dep., 339:19-340:12 (defective fountains were burned at the "B-1 test site"); Autote Dep., 70:23-72:3; 89:4-11 (stars and other firework material were burned east of the B-1 bunker); Carlton Dep., 561:7-562:7. And Mr. Veline testified that on more than one occasion "bags of

[70] Occasionally, Trojan would also send "off-spec" imported fireworks to a nearby company called Broco for disposal. Autote Dep., 535:17-539:20.

leftover composition would be laid out in a line by the bunkers . . . and ignited and burned." Veline Dep., 248:12-249:20.

At the B-1 area, Trojan regularly stacked waste fireworks material including waste fireworks composition on the bare ground for burning. Carlton Dep., 247:23-248:10; Veline Dep., 293:22-294:15. Charred remains usually remained after burns in this location, but it is unclear if those remains were ever removed from the bare ground. Carlton Dep., 250:3-16. Trojan always had a fire extinguisher and garden hose present when conducting burns in the B-1 Bunker area, and employees used the extinguisher and hose to apply water to the burn area when necessary. Carlton Dep., 340:25-341:13.

F. Fires and Explosions

Trojan's operations were clearly sloppy and there were numerous incidents involving fires and explosions. On July 28, 1987, in one of the worst incidents, a Trojan employee, Jose Diaz, was killed by an explosion that occurred while he was believed to have been unloading wastes, including off-specification fireworks and fireworks chemicals/powder, into a storage trailer at Stonehurst. Ex. 10111 (newspaper article regarding explosion); Ex. 10112-3 (fire incident reports); Autote Dep., 368:20-371:24. Because Trojan had been prohibited by the AQMD from burning live waste, they had accumulated "quite a lot of it, much against our own will" in Building 10, which was "overstocked" at the time of the explosion. Carlton Dep., 243:16-23; 254:2-5; 421:8-25; *see also* Autote Dep., 373:1-379:21 (containers of pyrotechnic waste, some of which likely contained perchlorate, were stored in Building 10); Cunard Dep., 258:17-259:1 (Building 10 was filled to capacity with excess powder and defective fireworks).

Indeed, before the explosion in 1987, Trojan's manufacturing operations were producing perchlorate containing products such as "Stars" and "Nite Howlers", among others, and Trojan was generating a couple of pounds of live waste per day in 1987 as a result of its manufacturing operations. Carlton Dep., 423:3- 426:17. Because of the AQMD's prohibition on burning, Trojan had no way to dispose of this newly generated waste, and it was, therefore, sent to the already full Building 10 for storage. Carlton

Dep., 426:11-17 (The live waste in Building 10 at the time of the explosion contained perchlorate.). Mr. Autote also testified that much of the older waste in Building 10, which had been stored there for approximately ten years, was never burned because no one knew what type of pyrotechnic waste it was, and thus, Trojan thought it safest to leave it undisturbed in Building 10. Autote Dep., 384:1-385:16. As such, in 1987, Building 10 had become a virtual bomb.

The 1987 explosion destroyed several buildings and storage trailers, and burning fireworks debris was scattered for hundreds of feet around the plant and outside the boundaries of the plant, causing local brush fires as well as setting several nearby buildings on fire. *See* Ex. 10111 (newspaper article regarding 1987 explosion); Ex. 10119 (letter from Carlton regarding explosion); Autote Dep., 392:13-396:17. Mr. Autote testified that, after the explosion, he attempted to extinguish several fires in the vicinity of Building 10 with a hose, but gave up after the City of Rialto Fire Department arrived at the scene. Autote Dep., 370:2-371:5. After the explosion, Building 10 was completely destroyed and all that remained was "a hole." Autote Dep., 397:11-22. Some of the material in stored in Building 10, however, was "propelled during the explosion", and as such, not all the material in Building 10 was consumed in the explosion. Autote Dep., 397:23-399:6.

A City of Rialto Fire Department report concluded that overstocked and improperly stored firework wastes and management negligence in employee training led to the accident. Exs. 10112-13 (RFD fire reports). Mr. Carlton concurred that Trojan "certainly [had] careless management", improperly stored hazardous materials, and stored an inordinate amount of live waste in the building, but he maintained that this was forced upon Trojan by AQMD's refusal to let it burn accumulated waste. Carlton Dep., 261:10-262:9; *see also* Carlton Dep., 354:9-18 (acknowledging that OSHA issued violations to Trojan after 1987 explosion).

In another incident, two employees were treated for injuries as a result of the August 4, 1981 ignition of a metal bowl of fireworks composition in a finishing room at

the Stonehurst facility. Ex. 10070 (August 7, 1981 fire report); Autote Dep., 360:9-22 (two employees were injured). Mr. Autote testified that, after he saw the fire, he immediately grabbed a hose and began to apply water to the fire. Autote Dep., 358:21-359:25. In an effort to avoid this type of accident in the future, Trojan discontinued the use of the metal bowl, which was thought to be the cause of the fire. Autote Dep., 363:10-25. In yet another incident, a Trojan employee had to be treated for burns to his hands after a pyrotechnic device that he was working on ignited. Carlton Dep., 336:25-338:7; Ex. 10717.

VI. RDF HOLDING COMPANY

In September 1988, RDF Holding Company ("RDF Holding") acquired all of Pyrotronics' fireworks assets, including those in Rialto, out of bankruptcy. (Ex. 10069); Kwan Dep., 36:14-37:12; 358:5-12. RDF Holding also acquired 62-acres on the northern portion of the 160-acre parcel by Grant Deed dated December 7, 1988, but the property was subsequently transferred to Mr. Wong Chung Ming, who assisted RDF Holding with the acquisition by purchasing the property for $3.7 million. Ex. 10163; Kwan Dep., 35:2-16, 81:1-82:25; 113-14; 238:12-23. Mr. Wong continues to own the property to the present day, and it is currently leased to two other fireworks operators, one of which, APE, ultimately acquired RDF Holding Company's assets (and by extension the former assets of Pyrotronics). Kwan Dep., 80:6-81:15.

RDF Holding was formed by David Seto and Victor Kwan for the purpose of acquiring Pyrotronics from the bankruptcy court. Kwan Dep., 19:2-12; 19:22-20:3. Messrs. Kwan and Seto originally intended to continue running Pyrotronics' fireworks business, but the withdrawal of certain Chinese investors from a planned joint venture caused them to sell the Pyrotronics' fireworks' division shortly after it had been acquired. Kwan Dep., 32:22-24; 187:4-14.

The best picture of RDF Holding's short lived operations is provided by Margot Cartagena, who began working for Pyrotronics in 1980, then worked for RDF Holding, and continued on as an employee of Pyrodyne American Corporation and ultimately

APE until approximately 2002.[71] According to Ms. Cartagena, when RDF Holding acquired Pyrotronics' fireworks division, there was still "quite a lot" of fireworks inventory on hand, including off-specification fireworks awaiting disposal in Building 51 and consumer fireworks for resale that were stored in the four main warehouses. Cartagena Dep., 278:1-280:1. There were also raw chemicals left over "in many different buildings" at the facility. Cartagena Dep., 33:4-9; 35:1-11. While she worked for RDF Holding, Ms. Cartagena made plans to purchase fireworks in Asia, cleaned up the property, including the portion where Apollo manufactured, and repaired some of the buildings. Cartagena Dep., 34:24-35:7. She also testified that RDF Holding burned on-site some of the off-specification fireworks contained in Building 51, and this testimony is supported by documentary evidence. Cartagena Dep., 280:23-281:15; Ex. 10159 (October 1988 burn of hazardous wastes); Ex. 10161 (November 1988 burn of fireworks material); Ex. 10439 (December 1988 burn); Ex. 10875 (10/30/1988 Application and Permit to Burn).

The raw chemicals (including perchlorate) present at the facility when RDF Holding began operating were left-over from Apollo's[72] defunct manufacturing operations. Ms. Cartagena had observed these same chemicals on-site in the fall of 1987, when she became manager for Pyrotronics (which by then had declared bankruptcy) and began to cleanup the facility.[73] Cartagena Dep., 308:21-310:7; 311:3-8. But she was given no direction from her general manager, Mr. Apel, to dispose of the

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[71] On September 30, 1988, Margot Cartagena was "terminated" by Pyrotronics; the very next day, October 1, 1988, she was "rehired" by RDF Holding, for whom she worked until January 20, 1989, when RDF Holding terminated her because its assets had been acquired by Pyrodyne American Corporation ("Pyrodyne"). Cartagena Dep., 34:24-35:1, 278:1-7 and Ex. 1014; *see also* Kwan Dep., 42:5-43:5 (Cartagena performed same job for RDF Holding that she had for Pyrotronics). In addition to Ms. Cartagena, RDF Holding also hired all of the other employees that had been working for Pyrotronics in Rialto. Kwan Dep., 30:12-25; 47:13-48:2.

[72] It is not clear exactly when Apollo's manufacturing ceased. Mr. Hescox testified that the production of consumer fireworks such as cones and base fountains continued after Pyrotronics declared bankruptcy. Hescox Dep., 512:23–513:16, 548:13–549:11.

[73] In fact, these were the same chemicals that Mr. Apel had ordered Ms. Cartagena to omit from the company's Hazardous Materials Business Plan, as discussed above. Cartagena Dep., 376:1-23.

chemicals, and in light of the fact that Pyrotronics was in bankruptcy, it apparently did not have, or at least did not wish to allocate, funds for proper disposal. Cartagena Dep., 318:16-21, 322:3-16; 322:23-323:6. Nothing was done by RDF Holding either. It was not until APE's predecessor Pyrodyne American Corporation ("Pyrodyne") acquired RDF Holding several years later that Ms. Cartagena received "authorization to go and contact someone for the disposal" of the raw chemicals. Cartagena Dep., 322:23-323:6.

On January 20, 1989, RDF Holding Company's consumer fireworks assets were purchased for $1 million by Pyrodyne, which began operating on the 160-acre parcel. Kwan Dep., 56:4-15 and Ex. 1325; Kwan Dep., 59:7-10. RDF Holding sold to Pyrodyne the "whole package" it had purchased from Pyrotronics, which included consumer fireworks, equipment (including fireworks presses), fireworks stands, and trademarks. Kwan Dep., 58:3-23; 59:14-60:10; 340:11-20; 341:7-14. In 1990, Pyrodyne's name was changed to American West, Inc., and later to American West Marketing, Inc. On February 1, 1995, American West Marketing, Inc. and Freedom Fireworks, Inc., merged into APE, which acquired all of their respective assets and liabilities.[74] APE's operations continue to the present day, and are discussed below.[75]

After Pyrodyne's acquisition of RDF Holding, in early 1990, efforts were finally initiated to dispose of the above-referenced chemicals that were left over from Apollo's manufacturing operations. Cartagena Dep., 330:10-22. Ms. Cartagena contacted Findly Chemical Disposal, Inc. ("Findly") by letter of January 2, 1990[76], seeking a quote for the

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[74] Because the entities that acquired Pyrotronics' consumer fireworks assets ultimately merged into APE, as described, APE may be the successor to Pyrotronics' liabilities. Discovery is ongoing in this regard.

[75] It should be noted that the Pyrotronics' consumer fireworks that were acquired by RDF Holding were ultimately distributed by APE. Cartagena Dep., 281:17-282:1. APE also acquired all of the material in Building 51, which it ultimately disposed of in the same manner that Pyrotronics had when it was operating. Cartagena Dep., 282:2-18. Further, shortly after Pyrodyne's acquisition, certain equipment on hand at the facility was inventoried and ultimately sold to an individual; with the money going to Pyrodyne/APE. Cartagena Dep., 441:2-442:7.

[76] The letter is dated January 2, 1989, but Ms. Cartagena's testimony makes clear that it was actually sent on January 2, 1990. Cartagena Dep., 328:25-329:16; 330:6-9.

disposal of several listed chemicals including 233 pounds of ammonium perchlorate. Ex. 10166. Findly responded with a proposal on January 15, 1990. Ex. 10193. But Findly's services were not ultimately used. Instead, according to Ms. Cartagena, Longhorn Fireworks, a manufacturer in New Mexico, picked up some of the chemicals. Cartagena Dep., 354:10-355:2; 359:11-360:3; 688:22-689:12; *see also* Mergil Dep., 156:11-25 (recalls men "with suits and masks" coming to the facility to retrieve leftover chemicals). And, according to Ms. Cartagena's testimony, the balance was taken by an individual named Dennis Manochio.[77] Cartagena Dep., 361:5-362:1. It is unclear what ultimately happened to these chemicals, but Ms. Cartagena acknowledged that Pyrodyne ended up saving about $15,600 by finding an alternative to hiring Findly for the disposal and this pleased Ms. Cartagena and presumably her employer, RDF Holding. Cartagena Dep., 377:8-15, 381:4-16.

VII. AMERICAN PROMOTIONAL EVENTS, INC. – WEST

American Promotional Events, Inc. – West ("APE") is one of the largest importers and distributors of consumer fireworks in the United States. APE, through its predecessors, began operating on the northern portion of the 160-acre parcel in 1989 and continues to do so today pursuant to a lease with property owner Wong Chung Ming.

A. APE Handles a Large Volume of Potassium Perchlorate-Containing Consumer Fireworks on the 160-acre Parcel

Documents and witness testimony establish that a substantial number of consumer fireworks are received and maintained at APE's Rialto facility. Many of these products contain potassium perchlorate, (*see, e.g.*, Cartagena Dep., 154:15-155:14, 429:16-430:7; Cunard Dep., 550:3-7), as reflected in "chemical composition" sheets for

[77] Ms. Cartagena testified that she did not know Mr. Manochio, but that he was a collector of fireworks labels who had come to the plant seeking leftover labels from Apollo. Allegedly, during the course of this conversation, Ms. Cartagena mentioned the leftover chemicals, and Mr. Manochio happened to agree to take them for use in his own fireworks manufacturing. Cartagena Dep., 361:5-371:10. Mr. Manochio passed away in 1993 and has not testified in connection with this litigation.

each firework received that indicate the percentage of various chemicals contained in a particular firework item. Ex. 10354 at USEPA003202, USEPA003334-335, USEPA003332-333 (71 out of 82 consumer fireworks tested by APE in Rialto in 2002 contained potassium perchlorate).

APE's predecessor reported in 1993 that it was handling up to ***169,000 pounds*** of fireworks per year; a Hazardous Materials Inventory Form in 1998 stated that ***320,000 pounds*** of consumer fireworks were on site; and a Business Emergency Plan submitted by APE to the County of San Bernardino in 2004 estimated that, on average, ***175,000 pounds*** of "pyrotechnic composition", or "consumer fireworks 1.4G", were stored at the facility. Exs. 18229, 10334, 11025; *see also* Cartagena Dep., 619:15-620:20 . And in 2000, APE reported to San Bernardino County authorities that it had ***400,000 pounds*** of pyrotechnical composition on hand, (Ex. 10337), although this figure was "a little under estimate" according to the testimony of Ms. Cartagena, (APE's plant manager in 2000), as she believed there were times in 2000 when APE had in excess of 400,000 pounds of fireworks material on site. Cartagena Dep., 150:2-151:12.

APE's current Rialto plant manager testified that in 2006 APE received 220–250 large shipping containers[78] of consumer fireworks. Ms. Cartagena, testified that from 1989–2000 APE received at least 100 of the large metal shipping containers annually with consumer fireworks from China.[79] Cartagena Dep., 51:20–52:22. The fireworks in these shipping containers are unloaded, placed on wooden pallets, and transported to one of the four large warehouses maintained by APE in the north-east portion of the 160-acre parcel; which are numbered as Buildings 76–79 and known as the Green,

[78] Matt Wilson testified that these containers were approximately 40' x 8' x 8', and came to the facility "maxed out" with fireworks. Wilson Dep., 107:15-108:1. He further estimated that 400–700 cases of fireworks were included in a large shipping container. Wilson Dep., 108:17-23. Ms. Salinas testified that the containers were 40 feet long and 12 feet tall. Salinas Dep., 53:24-54:8.

[79] Matt Wilson, the Rialto supervisor from approximately 2001-2007, testified that some consumer fireworks were always stored at the facility during this time period, though the quantities varied over the course of the year. Wilson Dep., 75:2-9. The plant generally had its largest inventory around June 1, its smallest by June 28, and started to fill up again with returns after July 4. Wilson Dep., 187:2-9.